

INDIANA - Fire Prevention

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INDIANA FIRE PREVENTION YEAR BOOK *and JOURNAL*

1927



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STATE FIRE
MARSHAL

PAUL HILL

**OFFICIAL ORGAN OF INDIANA STATE
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Are necessary safety devices and are recognized by Insurance companies as giving maximum protection.

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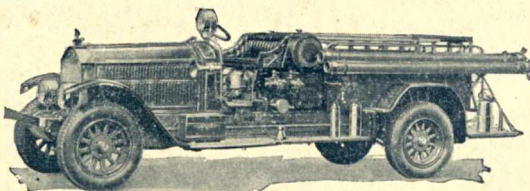
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In the "Metropolitan" is found everything that has made American-LaFrance Fire Apparatus famous—ample pumping capacity, power, reliability, compactness, accessibility and speed—all blended with typical American-LaFrance thoroughness and care.

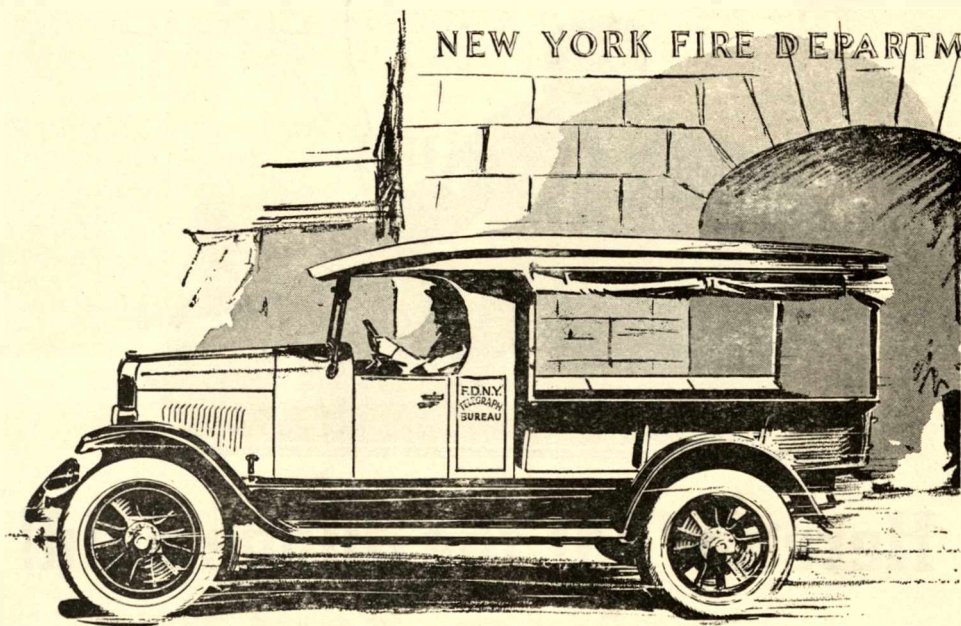


The "Metropolitan" serves every community with equal efficiency. Where fire hazards are many and complicated, its capacity and power are essential. In the smaller community, where fire protection often depends on one or a few pieces of fire apparatus, it is indispensable because the "Metropolitan" contains that reserve power which sooner or later every small community needs.

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as a tractor truck in converting old horse-drawn equipment. All sizes of Speed Trucks are built with 4 and 6-cylinder engines, affording a range of power to meet special local requirements.

For heavier work, there are International Heavy-Duty Trucks, in chain drive and double reduction drive types, for rated capacities up to 5 tons. These are sturdy, long-lived trucks capable of doing the heaviest kind of work at low cost.

For more specific information, get in touch with the nearest sales and service branch—there are 136 in the United States—and inquire concerning the chassis that best fits your service.

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**INTERNATIONAL
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Here's What the Judge Said!

"\$40 a month for five years," was the court's sentence. Five years of savings lost because the defendant had scoffed at automobile insurance. "I haven't any property anyway," he had said. "If I get into trouble, let 'em sue." His turn came—a fatal accident, a widow and her family destitute, a heavy damage suit. But the outcome was far different from what he had expected. The judge ordered him to pay \$40 a month for the next five years, because he had no available assets. Sorry for him, yes—but what about you? Do you have Personal Liability Insurance? Would you be protected?

Tom laughed at Cyclone Insurance for automobiles. "Those storms never come here, why waste my money like that?" But one terrifying night the winds struck—lifted his car, turned it over and smashed it against a tree. Sympathize with him, yes—but what about you? Do you have Cyclone Insurance? Would you be protected?

Dick jeered at Collision Insurance. "None of that for me, never had an accident in my life." But one black rainy night, a rushing, swerving car approached with blinding headlights. His skill saved him from a fatal smash, but only by a desperate turn that sent him into the ditch and damaged his car. Hard luck, yes—but what about you? Do you have Collision Insurance? Would you be protected?

Harry scorned Property Damage Insurance as a needless waste of money. "Let the other fellow watch out for himself, I'll take care of myself." But a pedestrian stepped thoughtlessly into his path. Harry jammed on his brakes, missed him—but skidded helplessly into another machine and damaged it badly. Costly repairs to make. Not his fault, perhaps—but what about you? Do you have Property Damage Insurance? Would you be protected?

OLD TRAILS gives this complete protection at a minimum cost. Its provisions for Personal Liability, Property Damage, Collision and Cyclone protection as well as the old standbys, Fire and Theft, are absolutely clear and concise. There's no misunderstanding an OLD TRAILS policy. Every claim is settled promptly and fairly. Ask any OLD TRAILS policyholder.

Insure Your Car With the "Sign of the Red Arrow Head!"

This radiator emblem of distinction and protection is placed on cars carrying OLD TRAILS insurance.

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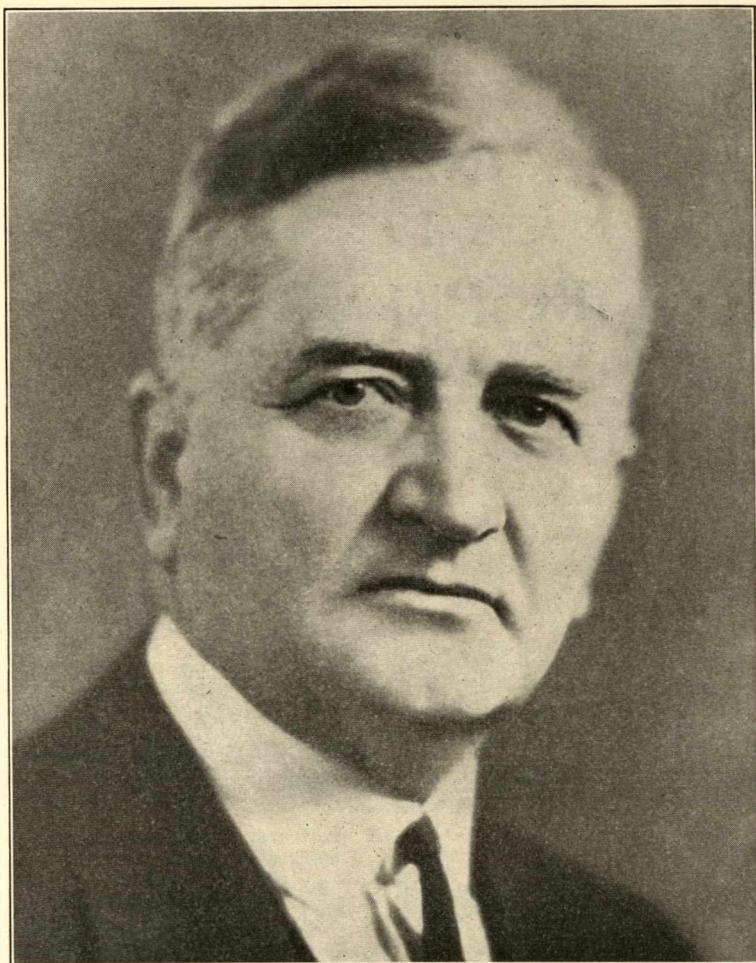
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 Old Trails Automobile Insurance Ass'n.

INDIANA 1927 FIRE PREVENTION MANUAL



Endorsed by
ALFRED HOGSTON
State Fire Marshal

Fourth Annual Edition



There is nothing in the program of economy and preservation of life and property of greater importance than the prevention of fire losses. I am pleased that the State of Indiana is doing so well in the reduction of it's annual fire loss.

The fire loss in Indiana during the fiscal year ending September 30, 1926 was \$8,-554,980. For the fiscal year ending September 30, 1927 it will run less than \$7,000,000. This means a saving of more than \$1,000,000 in one year.

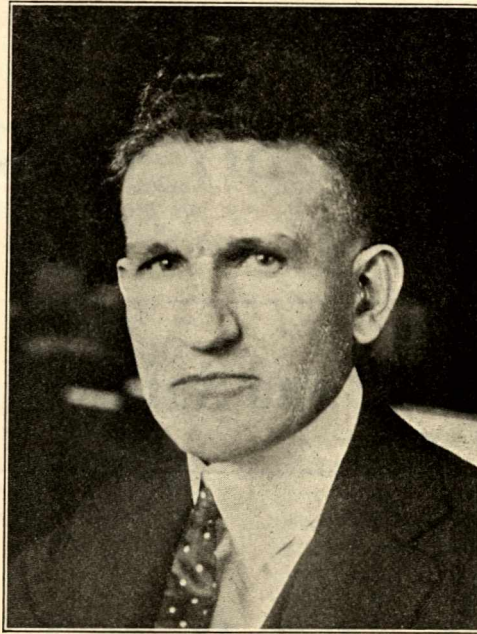
Recently the United States Chamber of Commerce in it's report commented favorably on the conditions in Indiana and showed that in comparison to property values, the fire loss in Indiana is steadily decreasing. Furthermore, whereas the increasing fire losses in some other states have forced insurance companies to raise insurance rates in those states, the insurance rates in Indiana have not been raised. This means much to the people of Indiana.

I want to congratulate all those in any way connected with the work thruout Indiana, and the citizens of the State as well, on the efficiency of their efforts and the excellent results being obtained.

Sincerely,

Ed Jackson.
Governor of Indiana.

Foreword



This is the fourth Year Book published by the Fire Marshal's Department. This one is the combined September and October issues of The Indiana Fire Prevention Journal which the department publishes and mails out free each month.

Thru this publication we hope to educate the public along the line of fire prevention and secure its help in decreasing our annual fire loss. We believe that education in this matter, as it is in practically all matters, is the foundation of all achievement. Without the proper education of the public very little can be accomplished. The decreased fire loss in Indiana during the last year of over one million dollars indicates that we are making progress in this State. We believe that our program of education is responsible for a part of this.

We wish to thank the Fire Boys of the State, the School Teachers, and School Officials, the Police forces of the various cities, the Judges, the Sheriffs and the Prosecuting Attorneys, the Township Trustees, the various officials in the State, the members of the last Legislature, the Governor of the State, and the public in general for the aid given in the great work of fire prevention during the past year. And we wish to thank the publisher of this book and the monthly Journal and those advertising therein for their part in this program, for thru them we are enabled to maintain this publication of education at practically no expense to the Department except that of mailing.

Sincerely,

ALFRED HOGSTON,
State Fire Marshal.

Silver Flash Gasoline

Indiana's Best and Safest Motor Fuel

Western Oil Refining Co.

Built, Owned and Operated in Indianapolis

Branches Throughout the State Including:

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THE FARMER AND THE RURAL FIRE

By ALFRED HOGSTON

Indiana State Fire Marshal

The farmer is beginning to protect himself on an organized basis from destructive flames. Fire fighting units in the rural areas are growing numerically. They are proving the value of preparedness. Their records speak for themselves. I look forward to the day when every township in the state has an organization of trained and equipped firefighters. The costly ravages of fires on the farms of Indiana can not be decreased until "the mob and pails" are replaced by organized volunteers and modern apparatus.

A fire on a farm is always a serious matter. It needs little encouragement or inadequate opposition to travel the limits of devastation. Small flames grow into big flames with such rapidity that prompt and effective action alone can save buildings when a fire starts. A fire that overwhelms a "brigade of bucketeers" with ease is as a general rule "still in its infancy." Most fires when discovered could be extinguished with little difficulty by "the minutemen of the rural patrol." These facts emphatically recommend organized scientific fire protection to the farmer.

The Indiana Farm Bureau Federation has wisely attacked the problem of rural fires. Its program of organization and education has received the full indorsement of the Indiana fire marshal's department. Personally I think every farmer in the state ought to put himself behind the movement of which the program is a part. Fire protection pays big dividends.

THE UNPROTECTED COMMUNITY

Consider the status of a rural community without organized scientific fire protection.

A carelessly thrown match or the "heating of hay" started a fire on Brown's farm. The barking of a dog awakened Mrs. Brown. A hurried investigation revealed the cause of Shep's demonstration. Mr. Brown grabbed a pail and tried to put out the fire while his wife frantically telephoned to the neighbors for help. The neighbors came. After much shouting and leaderless action, a bucket brigade was organized. A shortage of pails was discovered. Several men jumped into automobiles and went on a hunt for needed utensils. The flames laughed as they danced. "Untie the horses and cows," somebody shouted. The fire spread. Within an hour the barn was crumbling. Sparks filled the air. "The house is on fire," Mrs. Brown cried. The

barn was left to its fate. "Where is another ladder?" "Down by the hoghouse." It wasn't there. Men ran hither and thither trying to find a ladder. Meanwhile the fire bit hungrily at the shingles of the roof. Furniture was carried from the house. At last a ladder appeared. The bucket brigade went into action again. It fought in vain. Smoking ruins told a tragic story as dawn streaked the morning sky.

There is an interesting motion picture that could be produced. The scenario features a rural troop of firefighters. A synopsis tells a valuable story.

ON THE OTHER HAND

The captain of the firefighters is awakened by the frantic ringing of his telephone. "A fire on Smith's farm." The alarm goes over the township. The troopers are hurriedly notified. Soon automobiles are racing toward Smith's farm. What's that! A clanging bell sounds in the distance. The townships' apparatus is going to the scene of the fire! From every direction Smith's neighbors, members of the rural patrol, come to help him. They are armed—with fire extinguishers. The captain of the volunteers takes command immediately on arrival. He shouts a few definite orders. Every man knows what to do. There is action without confusion. Chemicals from the hand extinguishers check the fire temporarily. Mighty important! The apparatus arrives. In less time than it takes to tell about it, a stream from the powerful chemical extinguisher of the apparatus is playing on the flames. A length of hose is unrolled. The motorized pressure pump is connected with a nearby creek. Shortly water is being thrown on the fire. Twenty minutes later the rural firefighters are getting ready to go home. The wisdom of preparedness has again been demonstrated.

Every farmer should have at least one hand fire extinguisher in his home and not less than one in each barn. The first aid extinguishers should be of sufficient size to take care of the ordinary emergency.

PAINT THE LADDER RED

A ladder for the emergencies of fire should be found on every farm. It ought to be painted red and given a permanent location. This ladder should never be used for anything but its intended purpose.

Most rural fires can be prevented. A little "hoss sense," as Abe Martin would put it, can stop more fire than water. Ordinary

FIRE PREVENTION

TO REDUCE the fire hazard about the property entrusted to them, is a duty which every employee of the Standard Oil Company, (Indiana) is expected to perform.

In plants where there are a number of employees, one or more of them is assigned to fire inspection duty. Every employee whether assigned to this work or not, cooperates with these men to the fullest extent.

Employees are instructed to familiarize themselves with the location of all fire-fighting apparatus. They know that the apparatus must be kept in its proper place in perfect working order. And that it must be unobstructed so that it may be quickly obtained in case of emergency.

This is but a part of the Standard Oil Company (Indiana) safety campaign. It reveals, however, the sincere desire on the part of this Company to protect from the dangers of fire, not only the lives of its employees and its own property, but the lives and property of everyone living near its plants.

STANDARD OIL COMPANY

(INDIANA)

910 South Michigan Avenue

Chicago, Illinois

precaution has saved millions of dollars and countless lives. Trusting-to-Luck and Taking-a-Chance are foolish twins. Carelessness reaps a terrible harvest.

In and around the buildings of the farmyard hay and straw make the starting of a fire easy. A thoughtlessly dropped match, a burning cigarette butt and sparks from a pipe often explain the origin of the "unknown fires." It is always dangerous to smoke in a barn. Scratching a match has proven to be expensive so often that "thinking twice pays." A lantern is only as safe as the person using it is careful.

Among the major causes of rural fires in Indiana, according to the records of the State Fire Marshal Department, are defective chimneys and flues, sparks from chimneys and flues, explosions of kerosene and gasoline stoves, and lightning.

A chimney properly built, occasionally inspected, will never set the house of which it is a part on fire. An aperture in a wall of a chimney makes an opening for the sparks seeking an exit. It should never be tolerated. If there are cracks in that part of the chimney passing through the attic, sparks may "slip to freedom" and do "a lot of dirty work" before discovered. Inspect your chimney today.

ACCUMULATED SOOT

The burning of accumulated soot has been the beginning of innumerable fires. Soot is the result of incomplete combustion. Sometimes the heating unit is so poorly constructed that soot accumulates in abnormal amounts. The easy but dangerous way to remove the "choking deposits" is by burning. Then sparks, little carriers of flame, fly into the arms of the wind. Dropped finally in an old bird's nest under the eaves or a pile of rubbish, the sparks find a place to feed and grow. What often happens is an old story.

If the soot in a chimney catches on fire it should not be permitted to burn itself out. Close all openings into the chimney immediately. Wads of wet burlap may be used for the purpose. A few pounds of salt or a pail of sand thrown down the chimney is usually effective. The use of a chemical extinguisher is better.

Kerosene and gasoline stoves explode because of faulty construction or carelessness. Filling the tank of these types of stoves with the burners in operation is foolhardy. Despite numerous warnings, housewives take reckless chances when using the highly inflammable liquids in stoves. Gasoline possesses an explosive power that demands cau-

tion. Mistaking gasoline for kerosene is usually fatal.

Lightning has been described as a "seasonal firebug." Approximately 55 per cent of the fires on farms have been attributed to the "incendiary of the skies."

LIGHTNING RODS

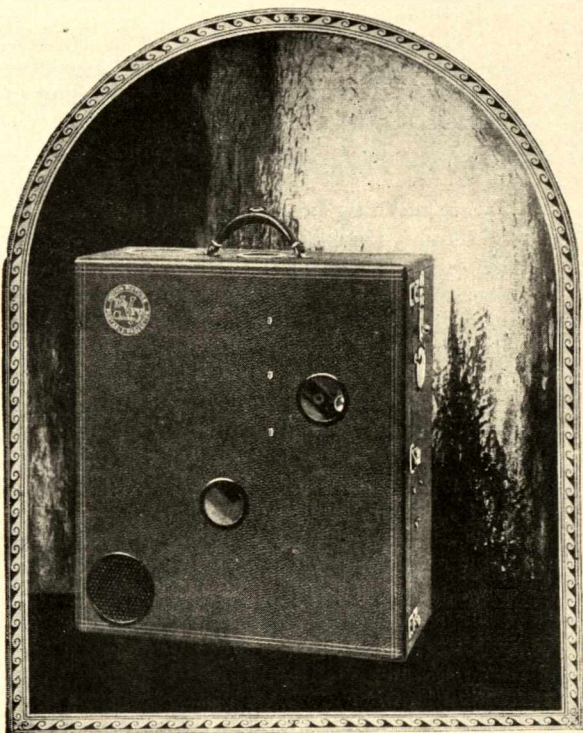
Can anything be done to prevent fires by lightning? I answer in the affirmative. The lightning rod is the tamer of Thor's hammer. Its achievements under the eye of scientific scrutiny should convince the most skeptical. The swindler, unfortunately, has put the lightning rod in bad repute. Many farmers think of it only in connection with a "skinner's game," formerly played by crooks. However, the lightning rod properly made and installed is approved and recommended by the United States government, the experts of the underwriters' laboratories, fire insurance companies, fire marshals and electrical engineers. Note that it is the "properly made and installed lightning rod" that is indorsed. Dabblers and persons of unknown standing should be avoided when buying lightning protection.

Occasionally farmers write to me for an explanation of mysterious fires in hay mows. In that spontaneous combustion isn't a myth I reply to them accordingly. "Green" hay sometimes bursts into flames without any visible cause. The fire comes from within. Hay containing a certain amount to moisture "heats" when the air doesn't move freely through it. "Heating" is due to chemical changes. The hay is dried and ignited by the "generated" heat. All hay ought to be thoroughly cured before stacked or placed in a mow.

The burning of stubble in fields, the grass of meadows, the vegetation of marshes and the weeds along roads is a common practice. Many buildings have been destroyed by fires that came from such "burnings" when left unguarded. A fire should never be started and permitted to run its course without adult supervision. Flames beyond control are always menaces. If a fire out of doors has not spent itself and died before nightfall, it should be watched or carefully extinguished.

Fire is a beneficial and necessary slave but a cruel and destructive master. It is well to always keep this in mind. Give the flames their freedom and you suffer for your folly.

Losses by fire can be lowered. Be prepared. Be careful. The fiery vandals are destroying an outrageous amount of American property. Talk prevention. Practice prevention. Let the tongue of flame teach an important lesson.



DeVry

Super Projector

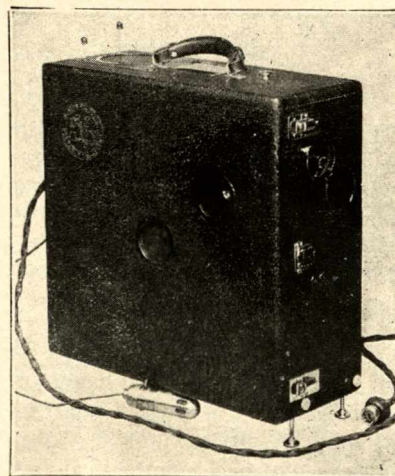
The fire prevention construction is primarily at the source (the aperture)—and it is absolute. The ventilation in the case of the Super DeVry is far superior to that in any motion picture projector made. The fans are double and operate even when the film is stopped for closer inspection,—reinforcing the stop on film shutter with a directed stream of cool air directly on the frame of film exposed to the light. The cone clutch disengagement on the multiple disc take-up makes this possible and is an exclusive DeVry feature. There are interlocking fire guards and snubbers, and the case is asbestos lined.

The DeVry Portable Motion Picture Projector

Contains every improvement known to the motion picture world—stop-on-film shutter, motor rewind, absolute safety from fire, movable pilot light, framing during operation, easy threading, and the minimum wear on the film. Type EU (County Agent's Model) uses either 30 volts or 110 at the turn of a switch.

More than 15,000 DeVry Projectors are in use today—more than all other makes of standard portable motion picture projectors combined.

The superior safety features of the DeVry Portable Motion Picture Projectors have resulted in their being the motion picture projectors using standard gauge film, approved for use in schools and other buildings in Indiana without fire proof booth.



THE NEW DEVRY 16 M M PROJECTOR IS NOW READY

The DeVry Movie Camera

Enables the Amateur to take professional movies for family, school or church. It holds 100 feet of STANDARD theatre size film, makes 35 mm prints by contact or 16 mm prints by reduction. Requires no tripod and no cranking. Write for free booklet: "Just Why the DeVry Takes Better Movies."



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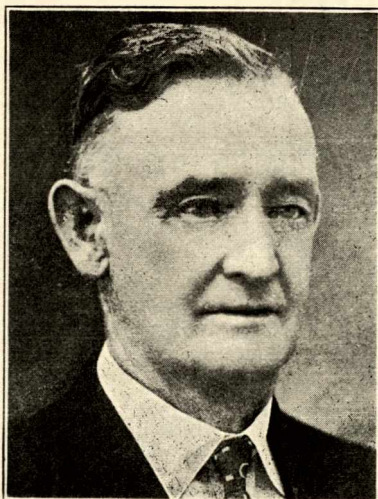
1111 Center Street

Desk 1

Chicago

THE JUSTICE OF INSPECTION

By CASH M. GRAHAM,
Chief Inspector, State Fire Marshal Dept.



The proper method of inspection is important. The same general rule applies to all classes of inspection. Inspectors should interview all parties interested in the property to be inspected for obvious reasons. The establishment of a spirit of co-operation makes for the best remedy in the elimination of fire hazards. A common ground of understanding between the inspector and owner is essential. Friendly talks open the road.

The old method was individualistic. The Inspection Division of the State Fire Marshal's office is working on a co-operative plan of inspection, condemnations and compliances, to replace the "strong arm" methods of the past.

We are frequently confronted with these questions—Is it right to take property from a citizen and destroy it? Is it right to burden a citizen with expenditures of money just to eliminate the danger of fire? We answer by saying, 'Yes and No.' It is right from the standpoint of justice to adjoining property owners who are endangered, and

penalized by insurance rates, as a result of a fire hazard maintained by another owner of property. But, it is not right to take property and destroy it, or to have it rebuilt without conferring in each particular with the property owner.

We do not believe it necessary to destroy property value to eliminate the fire hazard. It might, however, in many cases, be necessary to make additional investments on property to successfully and satisfactorily reduce the fire danger. Property, which in justice to all, should be removed, in our opinion, must have such little value that it would not justify the necessary investment to repair the property. The responsibility of removing the fire hazard belongs to the department and the methods by which the hazard should be removed rests with the property owner.

Section 5 of the State Fire Marshal Law provides that the fire chiefs of first, second, third and fourth class cities shall inspect buildings in their jurisdiction. We encourage them in the work by carrying on such inspections as the law provides for us. We will give them our help and support at all times to bring about better conditions.

It takes united effort upon the part of all to bring about success in fire inspection as in other lines of business.

In Exodus 22:6, there is a truth that remains the same through all the years: "If fire break out and catch in the thorns so that the standing corn of the field be consumed therewith he that kindleth the fire shall make restitution." This law of justice should be weighed often enough to fully impress the necessity for plans and programs of fire prevention. The conscientious inspector honestly seeks to protect property owners from the penalty of this law. He tries to keep ahead of the flames of destruction.

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D - I
SANITARY VENTILATING AND HUMIDIFYING UNITS**
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Schools, Hospitals and Other Public Buildings

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HEAT—Distributed properly and automatically to every corner of the room.

MOISTURE—In just the proper percentage assured automatically and without noise.

VENTILATION—Controlled automatically by the temperature within the room, without drafts and without the use of mechanical appliances of any kind, or the services of an expert operating engineer.

Thus it will be seen that the D-I System is a natural, easy, simple, efficient and economical way of obtaining heat, ventilation and humidity for old and new buildings

C. C. Shipp & Company

Indianapolis, Indiana, U. S. A.

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INVESTIGATION OF ARSON.

By MILTON W. WAREING,
*Chief Investigator, State Fire Marshal
Department*



No other crime is so carefully and completely cloaked and shrouded in secrecy and cunningness as the crime of arson. No other crime is so easily executed without the actual presence of the criminal as is arson. No other crime can be committed, the success of which so completely destroys the evidence, as arson. There is no more profitable criminal industry than arson.

There is no better way for the alien enemy to cause destruction than by this method. There is no more satisfactory way for a man or woman to get revenge than by burning the property of his or her enemy. Nothing gives the pyromaniac greater mental exhilaration than to witness the burning of a building. There is no better way for a criminal to hide or destroy the evidence in a prior or other crime than by burning the evidence, or his victim.

Therefore, the investigation of arson is most difficult. It presents a problem which requires more ingenuity in the solution thereof than any other problem connected with the compiling of evidence of crime. The various circumstances and conditions involved in the perpetration of the crime and especially if the object of the criminal is accomplished, ordinarily, results in the destruction of all the evidence as to the origin of the fire and the origin of the fire is the major factor in the compiling of evidence in the making of an arson case.

The investigator must establish the fact that the property was destroyed by fire; that this property was burned by design; that

the fire occurred at a definite date and hour; that the property destroyed was that of another person, or that the burning of said property was with the intent to prejudice and defraud an insurance company. All possibility of accidental origin must be eliminated. To do this he must have competent witnesses to prove the condition of the building just prior to the fire. It is a rule of law that all fires are presumed to have been of accidental origin and this presumption has to be overcome before the State can make an arson case.

In the case of robbery the possession of property simply changes hands from the person robbed to that of the bandit. Nothing is destroyed. In the case of burglary or larceny the property is carried away, but not destroyed. The property may be recovered and used as evidence against the thief. In the case of murder the corpse is there with the evidence as to what was the cause of the untimely death. In the case of arson the debris of the burned building with the presumption that the fire was of accidental origin is the proposition that confronts the investigator of arson.

The burning of a building, as a rule, is premeditated and consequently well planned. In many cases the investigator has to cope with persons who are educated in incendiaryism. New ways and means have been invented to set fires to buildings so that the origin can be concealed and made to look like the result of an accident. The electric wiring in the building may be shorted. Chemicals may be placed in a building so that when water comes in contact with these chemicals there will be an explosion, which will ignite gasoline sets. Sets may be arranged so that it will take hours before the water will come in contact with these chemicals, giving the incendiary time to be miles away before the building is discovered to be on fire. However, sometimes these sets fail to work. Sometimes the fire department arrives and extinguishes the fire and finds these sets. When the ways and means that were used to set the building on fire are discovered, the investigator has a comparatively easy task. He then looks for the person who has the motive for destroying the building.

Arson is very hard to prove unless a con-

(Continued on page 15)

ETHYL GASOLINE—the high compression fuel



THE ETHYL GASOLINE CORPORATION
25 Broadway New York



Transportation Electric Light and Power



INDIANA SERVICE CORPORATION

General Offices, Fort Wayne

(Continued from page 13)
fession is obtained. And if at the time of the trial, the confession is repudiated, the prosecution has difficulty in making a case unless the investigator is able to produce other evidence.

A young man made a confession in my office some months ago, wherein he stated he had burned his home to obtain the insurance money on his household goods. He retired about 9:30 p. m. After being in bed for some time he arose, went to the attic where he knew the insulation was off the electric wiring and placed an old mattress over the broken insulation and went back to bed. Early the next morning his house was discovered to be on fire. He with his wife escaped through the bedroom window. At his trial he repudiated his statement made in the State Fire Marshal's office. His attorney produced a fireman who attended the fire. He testified that the fire originated in or around the chimney of the house. The defendant had other witnesses to testify that the chimney was in disrepair and we lost the case. Therefore, it is very important that the investigator has witnesses to prove the origin of the fire; to have exhibits of sets if same are used in setting the building on fire; to get the culprit or his agents at or near the burning building within a reasonable time before the fire is discovered.

Many juries fail to convict unless we can produce some direct evidence connecting the defendant with the setting of the fire. As one juror remarked when leaving the court room after the trial of an arson case, where-

in the State had good and sufficient circumstantial evidence connecting the defendant with setting the fire, in which they returned a verdict of not guilty, "Well nobody saw him set a match to the building."

Further, arson is a peculiar crime and different from other crimes in that the result of the crime affects the whole people of the State, whereas other crimes may only affect one individual and the general morale of a given locality.

John Jones' home, covered by insurance, burns down in Pike County. The people of the whole state are affected by this fire because the people pay the bill. Each person pays his proportionate part in this loss, for the insurance companies operate in every county and the rates are fixed according to the fire losses of the entire state.

Steel Cabinet Work protects
you from fire, replacement
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Gary Land Company has improved thirteen subdivisions in the City of Gary. It is offering to the Public now the most desirable residence and business lots in the City of Gary. It owns the unimproved business lots on 5th Ave. and the unimproved business lots on Broadway in its First Subdivision.

GARY LAND COMPANY

(United States Steel Corporation)

Boyer Standard Fire Apparatus

Provides Positive Protection

We Specialize in Apparatus for Rural Fire Protection

Boyer Fire Apparatus Company

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JACK IMLER
Apparatus Engineer
Northern Indiana
Logansport, Indiana

LEO BAUSHKE
Apparatus Engineer
Southern Indiana
Wabash, Indiana

(Our Apparatus Engineers are experienced in Fire Protection. They will gladly confer with you on your fire protection problems.)

GUARDIAN OF THE STATE

BY NEILLI M. LONG, *Educational Chief State Fire Marshal Department*

The State Marshal Department has very fittingly been called the "Guardian of the State," and we want the citizens of Indiana to become better acquainted with their guardian.

We want the people to get a better understanding of the Fire Marshal Department; how it function; how it is financed, its aims and purposes; to understand that this department is working with and for them; not in an aggressive fault-finding spirit, but in a spirit of co-operation and helpfulness.

Some people feel that recommendations for fire safety following an inspection are based upon no higher consideration than an effort of an inspector to earn his salary by finding fault.

If you would win a man to your cause, first convince him that you are his true friend.

We are getting this message to the citizens of Indiana through the schools and the various civic organizations and are receiving excellent co-operation.

The word "guardian" means one who "guards or secures" and that is exactly what this department does.

"Guards or secures" the people of this State against fire, alike a friend and an enemy. A friend when carefully used, an enemy when used carelessly.

Fires best ally is a careless public. The so similar in construction, but differing so widely in meaning.

"Carefully" and "carelessly," two words careless fire-builder is as much a public enemy as the traitor who sells the nation's safety in the time of war, and is as deserving of punishment.

It does not take an extraordinary mental process or a university education for us to realize that a burning match or cigarette thrown aside may start fire of serious proportions. If these two careless habits were broken the saving of many lives and thousands of dollars would result annually.

The Fire Marshal Department "guards or secures" our citizenship against the enemy fire without one cent of expense to the citizen.

The money which maintains this department is obtained by a tax on non-resident insurance companies and license fees paid by dry cleaning establishments.

The people are not taxed for the maintenance of this office. This is, indeed, a cheering message in this day of high taxation.

To properly "guard or secure" the people against fire an educational program is absolutely essential.

The people must be taught that it is only by the faithful application of preventative measures in industry, building and business by each individual that the nation can hope to check the havoc and turn into useful channels the vast sum now paid as tribute to our negligence and ignorance.

Fire prevention is good citizenship and the true patriot is he who loves his country, and, instead of boasting about it serves it by being a good citizen.

Realizing the great need of education the law of Indiana says, "It shall be the duty of State Fire Marshal to carry on such educational work throughout the State which, in the opinion of the Fire Marshal, may be best calculated to secure the adoption of fire prevention measures by the people."

Someone has said: "The greatest obligation any generation owes is the obligation it owes to the next generation. That obligation we discharge through the function of education."

Emerson says, "Education is training away the impediments."

That is exactly what the educational division of the State Fire Marshal Department is endeavoring to do, "train away the impediments," to point out the fire hazards and educate the people how to avoid them. Educate them in habits of safety and carefulness, for fire prevention should be considered not as a necessary task but as a rule of conduct. And we are driving this home to the citizens of Indiana.

During the last year many civic organizations such as the Kiwanis and Rotary Clubs, Parent-Teacher Associations, Women's Clubs, District and County conventions have been addressed on the subject of fire prevention. And almost invariably they make this comment, "We have never realized either the great need or the scope of fire prevention. What can we do to help?" This question is answered by asking if they have a Fire Prevention committee in their organization. If not, organize one. Sometimes the committee is there, but is not functioning. So we say, "Get busy 'the harvest is white and the laborers are few.' We need you."

For if the average citizen paid as much attention to fire prevention as he does to

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Your Fire Loss

by installing

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A card addressed to one of the following offices will bring full details.

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Executive Office—Philadelphia, Pennsylvania

Sales Offices: **CHICAGO, DETROIT, GRAND RAPIDS, CINCINNATI, CLEVELAND, ST. LOUIS, MILWAUKEE,**
and other principal cities.

bridge, golf, movies, etc., the fire prevention problem would be solved.

The county Teachers Institute is another channel we use in our educational work. Here we can bring to the teachers the problems we want them to help us solve. And the co-operation of the teachers and superintendents of the State in this work is a joy forever to the Educational Chief. We feel that the work bringing the greatest results is that done in the school.

A systematic inspection of schools is being made for the first time in the history of the state. The state is taken by counties, each school house thoroughly inspected, the lecture on fire prevention given from primary grade to High School and a fire prevention committee, composed of students is organized. We have hundreds of these committees over the state and they are doing a wonderful piece of work.

The inspection of schools is most important. Real inspection is not just passing through the corridors and noting if there are fire extinguishers on the wall, but starting in the basement and going to the attic looking for every possible fire hazard.

Webster defines inspection as a "strict examination; close scrutiny." A strict examination is made of the furnace and fuel rooms; the lighting system; the chimneys. We ascertain if the building has sufficient exits and the exit doors equipped with panic release bars. We note the cold air ventilators stop in the attic; how many stairways, what kind and how wide; and the fire protection. In fact, when the inspection sheet comes back to the chief's desk she has a mental picture of that building.

The recommendations on the building are written and sent to the trustee or school board, whichever it may be. They are given from sixty to ninety days to comply with these recommendations. At the expiration of that time limit, if they have not complied we ascertain why and insist that it be done. If the school authorities feel our recommendations are too severe they can appeal to the State Fire Marshal, and if he upholds

the recommendations they may appeal to the circuit court.

We try to be reasonable in the things we ask. We have no desire to be arbitrary, but we must safe-guard the children. And the school authorities are just as anxious to do that as we are. We are very happy over the fact, that although that we have not always agreed on recommendations, we have always been able to iron out all differences and not a single case has been taken to court.

During the last school year five hundred and fifty-seven school buildings were inspected; five hundred and six addresses made; reaching one hundred and sixteen thousand, eight hundred and twenty-eight children; forty clubs and twenty-one institutes were addressed.

Again, for the first time in the history of the State, rules and regulations governing school houses and school gymnasiums, colleges and college gymnasiums have been complied with. We feel the educational division is rendering a real service to the State. Our goal is every school house thoroughly inspected and a fire prevention committee organized and functioning.

Josephine Shaw Lowell once said that "People would always do right if they were shown the right." If that seems a bit optimistic, remember that it is only with a high standard and confidence in its ultimate attainment that we may hope to make real progress.

There is no question that it is the fire preventionists' business to show the people what is right, providing they have studied the proposition and themselves know what is right. To do this requires courage and tact of a high degree.

To some, the study and promulgation of Fire Prevention may seem prosaic, but there is an idealism and an altruism in it that those who measure life with the yard stick of dollars and cents fail to see. Such people lose the greatest joy in life by looking down instead of up, stumbling over the clods and never seeing the blue sky, missing the sunshine of joy and service to others. "Look up, lift up, lend a hand." Much has been done but much remains to be done.



Sally Lee

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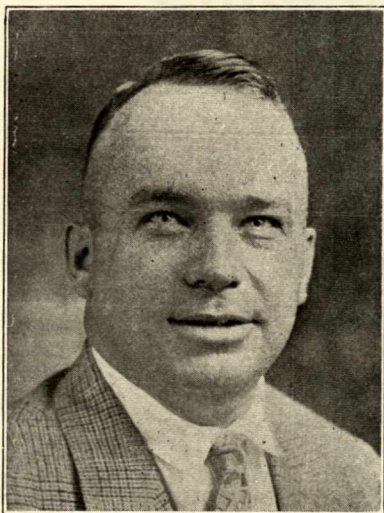
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Indiana Harbor, Ind.—Mr. Schock
- Cery Cleaners.....532 Washington St., Gary, Ind.—Mr. Cery
- Home Cleaners.....20 East 20th Pl., Gary, Ind.—Mr. Svaco
- Modern Cleaners.....3708 Broadway, Gary, Ind.—Mr. Coler
- Progressive Cleaners.....552 Washington St., Gary, Ind.—
Mr. Finklestein
- Reliable Cleaners.....1032 Broadway, Gary, Ind.—Mr. Barbanell
- Sanitary Cleaners.....664 Washington St., Gary, Ind.—Mr. Oslon
- Twin City Cleaners.....3515 Parish Ave.,
Indiana Harbor, Ind.—Mr. Rothstein
- Klever Kleaners.....4713 Forsythe, East Chicago, Ind.—Mr. Singer
- New East Chicago Cleaners.....4734 Olcott, East Chicago, Ind.—
Mr. Smulevitz
- Casper Matson Cleaners.....410 Indpls. Whiting, Ind.—Mr. Matson
- Hammond Cleaners.....742 State Line St., Calumet,
City, Ill.—Mr. Brown
- Hopman Cleaners.....375 Sibley St., Hammond, Ind.—Mr. Boyer
- Mottle Cleaners.....270 Conkey Ave., Hammond, Ind.—Mr. Mottle
- Prosperity Cleaners.....Calumet & Plummer Aves.,
Hammond, Ind.—Mr. Levin
- South Shore Cleaners.....236 Hohman St., Hammond, Ind.—
Mr. McQuade

GENERAL REPORT OF DRY CLEANING DIVISION OF STATE FIRE MARSHAL DEPARTMENT

By ROLLIE C. J. GRANGER, *Dry Cleaning Engineer of the Department*



Since the last report many improvements have been made over the State in our dry-cleaning plants. Many firms have rebuilt entirely. Others have remodeled extensively. Today we can say without fear of contradiction that the dry cleaning plants of Indiana as a whole are in the best condition of any in the country.

This has been brought about, not by mandatory orders making it compulsory for them to do these things, but by friendly talks and suggestions. We have shown them wherein they would not only benefit themselves, but be in a position to turn out a better class of work, greatly increase their business, get a lower rate of insurance but most of all give their employees much healthier working conditions.

In this remodeling and rebuilding program, the very latest in tumblers, extractors and washers have been installed. Quite a number have also changed cleaning solvents and to date where this has been done not one has been reported as having had a fire or explosion.

The public in general likewise is gradually becoming educated as to the serious danger of home cleaning. Altho several have been killed and a number seriously burned by attempting to do home cleaning, yet each year shows a marked decrease in this type of casualty.

In one city, two young ladies were killed the same day in an attempt to save a few

pennies on some cleaning. Since then the licensed cleaners in that community report quite an increase in business. Various newspapers and magazines through their "Household Hints" column are partly responsible for these attempts at home cleannig. It is dangerous to tell the housewife how to clean clothes with gasoline.

One newspaper of the state carried a full column in their "Household Hints" advocating home dry cleaning in electric washing machines. As soon as this was called to the attention of our department, a letter was sent advising it of the danger to which their readers might be subjecting themselves. In a few days the same amount of space was devoted by the paper to a retraction. Such cooperation saves money and lives.

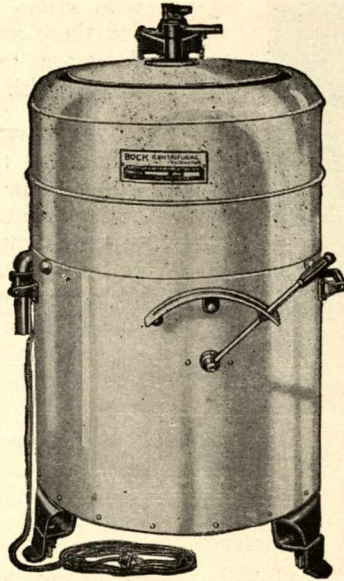
While the dry cleaners themselves put on an educational campaign on the dangers of home cleaning, numerous people think it is with selfish intent. This is erroneous.

We sometimes get the impression that the prices charged are exorbitant. If we would take the time to go through a modern plant, we would see the "cleaning prices" from a different angle. Considering what it costs to buy and install equipment, erect necessary buildings as required by law, note the salaries paid to employees and amounts paid for materials, etc., prices charged are very modest.

The State Fire Marshal hopes he will receive no further reports telling about some one being killed or burned while attempting to do their own dry cleaning. Through the educational work as done by the department in the public schools, the official publication issued by the department, and inspections, he seeks to reach the public. In the course of time, every individual will understand the true meaning of the term "dry cleaning," the dangers connected therewith and the importance of having it done by licensed cleaners.

There are at this time sixteen counties without a licensed cleaning plant, namely: Brown, Crawford, Franklin, Harrison, Hendricks, Jennings, Martin, Newton, Ohio, Parke, Perry, Ripely, Scott, Switzerland, Union and Washington. Those operating pressing establishments in any of the above send such cleaning as they receive to licensed plants as a general rule.

Bock Extractors Equipped With Vapor-Proof Motors



Model 24V

Reducing the Fire Danger in Dry Cleaning Plants

The development and perfection of the vapor-proof motor marks a new chapter in the development of dry cleaning plant equipment. For years the industry has been handicapped because of the danger of using electric motors in the gas room. The Bock Extractor, with all its exclusive features, *now equipped with the vapor-proof motor eliminates that danger.* This means that all pulleys, belts, grease and other costly and trouble making equipment made necessary by the belt-driven machines can be removed.

The vapor-proof motor and switch are entirely enclosed and insulated from the air in the room. Bock Extractors equipped with these motors have been subjected to every possible test and found 100% vapor-proof. The 24V, 15 lb. capacity, the

25U, 25 lb. capacity and the 75U, 75 lb. capacity, equipped with vapor proof motor and switch, complete the most modern and most efficient line of Extractors, ever offered to the dry cleaning industry. Write today for detailed descriptions and specifications.

MODEL 24V

Load capacity 15 pounds dry weight. Requires only three to four minutes for uniform extraction. Centrifugal force is 700 times its own weight at circumference of basket. $\frac{1}{2}$ H. P. Motor with any required power specifications. Base is mounted on non-conductive portable blocks. Occupies floor space only 27-inches square, and is but 36 inches high over-all. Net weight 278 lbs.

THE BOCK LAUNDRY MACHINE COMPANY
TOLEDO, OHIO

STATISTICALLY SPEAKING



By G. H. SEE

Chief Clerk and Statistician, Indiana State Fire Marshal Department

Fire statistics tell us that we are a wasteful people; that we are a careless people; that we are an indifferent people.

LOOK! Statistical figures are constantly changing positions with one another. See! See! The sign of the dollar is leading a promenade clad in fiery raiments. There comes a nosey 7 with a comma at her heels—and there is an odd 5—another 5—a second 7 with a comma at her heels—an even 6 dances forward—behold the lanky 1—a third 7 with a comma at her heels—Madam 8 plods into view—there's a little 2—a fat 0 wabbles at the end. The marching figures stop. Now we can read them—

\$7,557,617,820

What's that! An unseen finger writes in smoke and flame—FROM 1901 to 1925, INCLUSIVE, THE FIRE LOSS OF THE AMERICAN NATION REACHED THIS OVERWHELMING TOTAL.

Listen! A voice speaks.

“Seven and one-half billions is almost twice the amount of all the gold and silver coin and bullion of the United States in existence. It is one and one-half billions more than the entire national wealth of Belgium. It is a sum sufficient to run the United States government completely for two years and leave a half billion. It would support both the army and navy for a dozen years much better than at present.”

The Curtain drops. What a relief.

A siren sings an interlude as thundering wheels roll through the heavy traffic of our city. We hold our breath.

The curtain rises again. Such figures. They're easier to understand—more comprehensible!

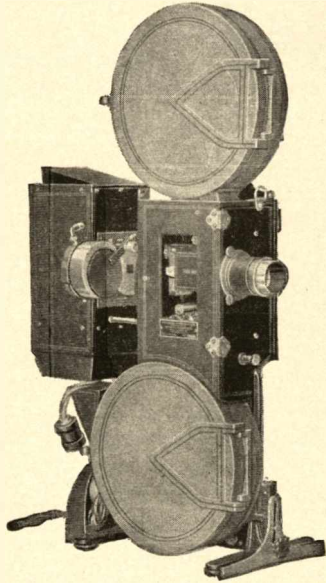
\$559,428,858

They sing to the music of alarm bells. Catch the words.

**“We tell the story. We tell the story
Of Nineteen Twenty-Five
Of Nineteen Twenty-Five
We tell the story. We tell the story.”**

Continued on page 25

After the Fire is Over



and the blame is placed will you
be able to say you did your best?

Holmes projectors are built to pass the most rigid inspection of National Board of Fire Underwriters or easily live up to the regulations of State or City specifications. Every inch of film is protected by metal. Safety rollers and metal safety shutters automatically protect film from igniting.

25 used by U. S. Navy and by famous Hollywood celebrities, directors and producers.

15 day trial, send for catalog.

HOLMES PROJECTOR COMPANY

1624 North Halstead Street

CHICAGO

We Want You

TO TRY

REFINERS NI-TRO knockless GASOLINE

It is a pure petroleum product, unadulterated and not poisonous in any quantity.

It **WON'T KNOCK** under high compression, but delivers its full power with every stroke.

Try it in your car—the difference will surprise you..

THE REFINERS OIL COMPANY

(Indiana)

Mr. Actuarial Bureau informs us that it's the latest, accurately compiled HIT.

We admit that the "hit" is a knockout, yet we laugh. What do we care for expenses? We've got a lot of them.

Our Actuarial friend is astounded at the devil-may-care attitude we display.

"Don't you realize that you lost over a thousand dollars a minute in 1925 by fires," he says attempting to impress us with our prodigality. "And you're losing more than that a minute now," he adds.

We yawn as if bored. Why talk about unpleasant things. Let's go home. We've seen enough figures. And figures are such docile and obedient things that anybody can push them around to serve every purpose. Possibly these figures telling us about our fire losses have been—well—manoeuvred.

"You're wrong," Mr. Actuarial Bureau asserts. "There has been no shuffling of figures in tabulating the latest statistical showing. If they tell an ugly and painful story, you ought to do something to make a more pleasant tale possible. As things stand you are paying for your sins—your fire sins."

Our fire sins? Somebody is always inventing new kinds of sins. Well, what are they?

"Don't be in a hurry and you'll see them," Mr. Actuarial Bureau urges.

The Nineteen Twenty-Five chorus finally danced into the wings. It was a poor act. Too much repetition. Too many clanging bells. We never did enjoy hearing anything repeated over and over again. We can't appreciate nervous alarms. Let's forget them. Maybe this next act will be better. Our program says that the Careless Twins will open it. Here they come. They don't look good to us.

MATCHES—SMOKING: "We're the worst malefactors in the Land of Flames and destroy over thirty millions of dollars worth of property every year."

Ye gods and little fishes!

DEFECTIVE CHIMNEYS AND FLUES: "In culpability we're the nearest rivals of Matches—Smoking. We're only eight or nine million behind."

Weep with us.

HEATING UNITS: "We start enough fires in the United States annually to burn over twenty millions in wealth."

How do they get that way?

SPONTANEOUS COMBUSTION: "I do more dirty work than is generally realized, but not as much as they say I do. It is convenient to use me in explaining the undiscovered activities of my colleagues."

Mystery! Page Sherlock Holmes.

ELECTRICITY: "Traveling through wires, I find thousands of opportunities to start fires. I prefer the neglected sadiron and curling iron."

Too much juice.

SPARKS: "We like to play in piles of rubbish, but give us a roof with wooden shingles and we are happy."

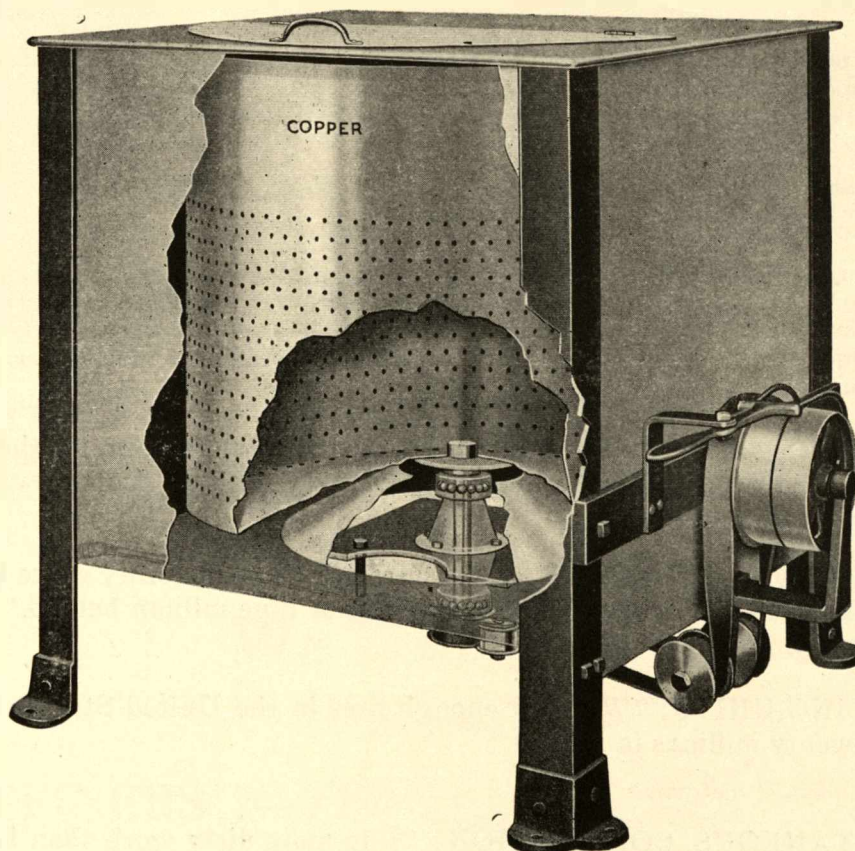
We've had enough. This harping on ragged themes gets our nanny. Statistics make us sick. They're too blunt—sort of uncouth.

What availeth a sea of ink—used in printing statistics?

Why are statistics compiled in the first place?

Continued on page 27

DRY CLEANERS' EQUIPMENT



Write for our catalog describing our "Indiana" Dry Cleaning Plant
—a complete Cleaning Plant consisting of washer, extractor, clarifier, pump, trap, underground storage tanks, and tumbler.

F. M. BOWERS & SONS CO.

Manufacturers

INDIANAPOLIS, INDIANA

1420 W. Washington Street

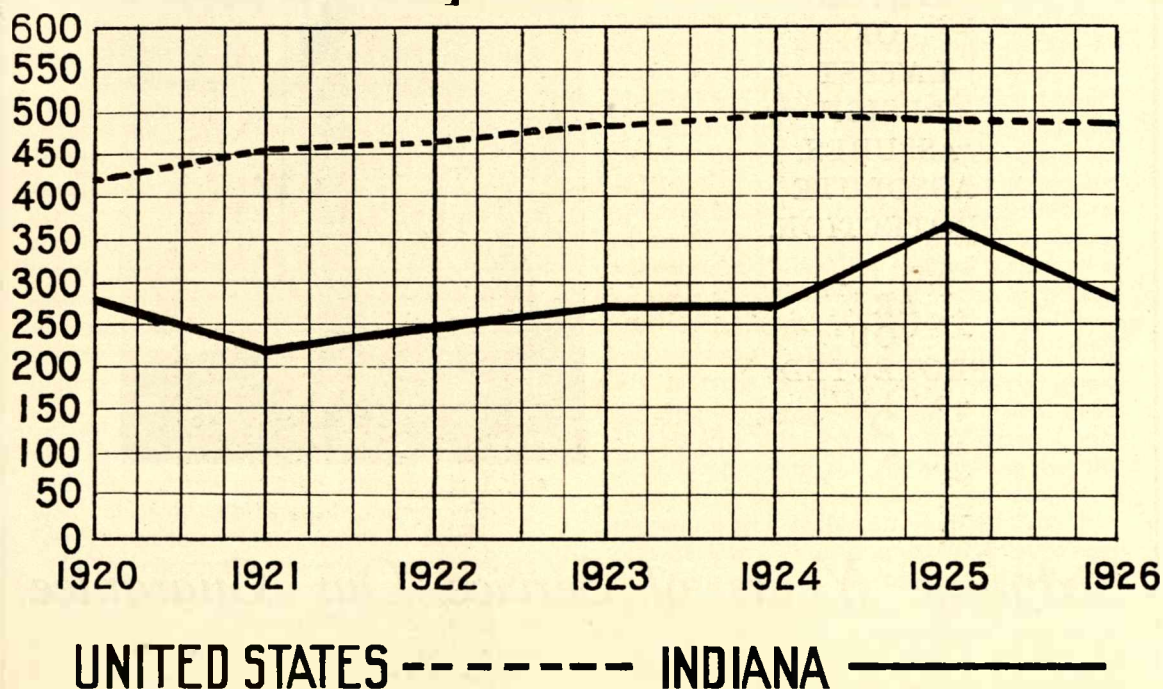
More specifically—what purpose do tabulated figures showing losses by fire serve?

The questions are interesting. The answers?

Statistics tell stories of value in planning for the future. They teach lessons of utmost importance in the formulation of programs. They point directly to the courses of progress. They are beacons that reveal the shallows of error and buoys that mark the routes of safety. A hurried study of statistics may save a million dollars in wasted effort. One glance at tabulated figures may suggest a line of action full of promise. A wealth of information is contained in carefully compiled statistics.

More specifically—flaming figures speak definitely and positively. But we don't like to hear 'em.

Comparison of National and Indiana Per Capita Fire Loss



GRAPH SHOWING COMPARATIVE FIRE LOSSES OF INDIANA AND
UNITED STATES AS A WHOLE.

By J. D. WRIGHT

(National figures from The National Board of Fire Underwriters. Figures for Indiana based on actual reported records.)

Indiana enjoys the enviable distinction of being classed among the states whose per capita fire loss is below the figure of the national per capita fire loss. In 1920 Indiana suffered a loss of \$2.79 per person, compared with \$4.21 for the nation; in 1921,

\$2.25 compared with \$4.57; in 1922, \$2.48 compared with \$4.63; in 1923, \$2.62 compared with \$4.84; in 1924, \$2.60 compared with \$4.90; in 1925, \$3.65 compared with \$4.85; in 1926, \$2.74 compared with \$4.79.

This splendid record has been and can be maintained only by a zealous co-operation between citizens and our fighting and prevention systems in the strict adherence to fire prevention measures.

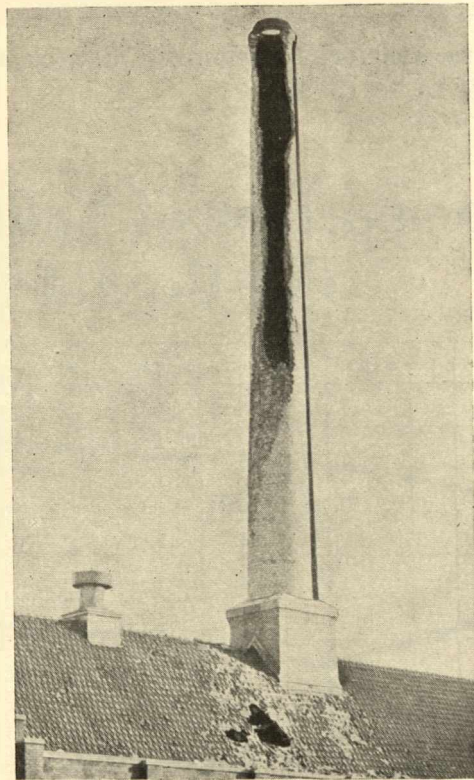
The Result of Neglect

CHIMNEYS
ARE A
MARK FOR
LIGTHNING.

AN
IMPROVED
MILLER
SYSTEM
OF
LATEST
DESIGN
ASSURES
ABSOLUTE
PROTECTION.

ARE
YOU
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Sixty-one Years of Service Our Guarantee

Lightning protection for chimneys, churches, colleges, schools and buildings of every description. Send blue prints and specification. Let our engineering department solve your problems. Our materials approved by Underwriter Laboratories.

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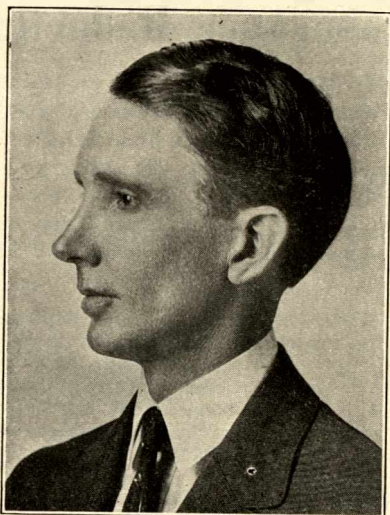
306 Geyer Ave.

Established 1866

St. Louis, Mo.

DUE PROCESS OF LAW

By FRED I. KING, *Attorney State Fire Marshal Department*



It is an exceedingly simple matter, of course, to state fundamental principles of constitutional or statutory law. The application of such fundamental principles to concrete facts, however, and their interpretation in the light of particular circumstances and conditions have kept a multitude of courts and judges busy since organized society first began to function as a factor in human existence.

And no one of these constitutional principles has been more potent in keeping judges and courts from growing indolent than that one, variously expressed, but most familiarly referred to as "due process of law."

In the enactment and enforcement of statutes creating fire marshal departments and in clothing these departments with authority involving property rights it was to have been anticipated, as a matter of course, that questions would be raised, relative to these statutes, which concerned this fundamental principle of "due process of law."

The fire marshal law of Indiana, first enacted in 1913 and as modified by later amendments, invests the State Fire Marshal and his deputies with power to order the remedying or removal of fire hazards and thus to affect the property rights of the individual citizen whose premises may be made the subject of such order. That these property rights may not be thus affected or destroyed without "due process of law" is perfectly clear but just what constitutes this "due process" is a matter which frequently has been a subject of controversy in the past and which still occasionally distrubs the minds of lawyers whose clients challenge

the right of the State thus to interfere in what they consider their own private affairs.

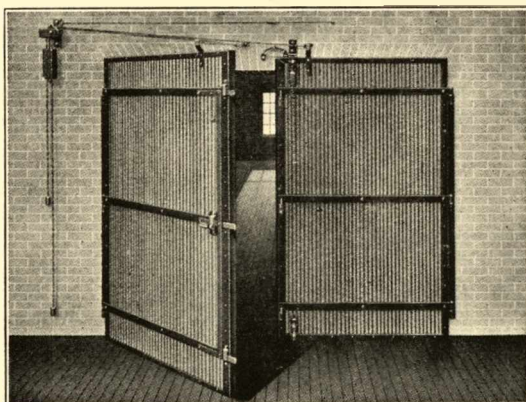
Judged by standards long since established by the highest courts of the land it would seem clear that the procedure provided in the State Fire Marshal law relative to the condemnation of property as a fire hazard is in accord with the essential principles of "due process of law."

The Statute under which this power is exercised provides, first, for the making of an inspection and the issuing and serving of a formal order upon the owner and occupant of the building, which is the subject of the inspection, directing what shall be done to remove the fire hazard declared to exist. From this order successive appeals are allowed by the Statute, first to the State Fire Marshal and then to the Circuit Court which is clothed with authority to make final disposition of the matter. Thus the owner or occupant of property affected by a "repair" order or an order of condemnation is afforded ample opportunity for a hearing before a competent tribunal as well as for a review of the proceedings by the State Fire Marshal after the original order is issued by a subordinate directly charged with that duty.

While the Statute very properly grants the right of an appeal from the final order of the Fire Marshal to the Circuit Court, there is precedent for the assertion that this step might not be necessary to complete a procedure well within the limits of "due process of law." For it must be remembered that "due process" is not necessarily judicial process and that the term does not necessarily presuppose a procedure in a regularly constituted judicial forum. The United States Supreme Court has so declared in numerous decisions, the rule being succinctly stated in *Reetz vs. Michigan*, 188 U. S. 505, wherein the court says, "It not infrequently happens that a full discharge of their duties compels boards, or officials of a purely ministerial character, to consider and determine questions of a legal nature." And again in *Public Clearing House v. Coyne*, 194 U. S. 497, 508, "Due process of law does not necessarily require the interference of judicial power nor is it necessarily denied because the disposition of property is affected by the order of an executive department." To the same effect are *Bates and Guild Co. v. Payne*, 194 U. S. 106. *Weimer v. Bunbury*, 30 Mich. 201, and *Garvin v. Daussman*, et al, 114 Ind. 429.

Continued on page 31

YES! Richmond Corrugated Steel Doors --- Fire Protection --- Insurance Reduction



Made in Swing and Slide Types—All Carry Underwriters' Label

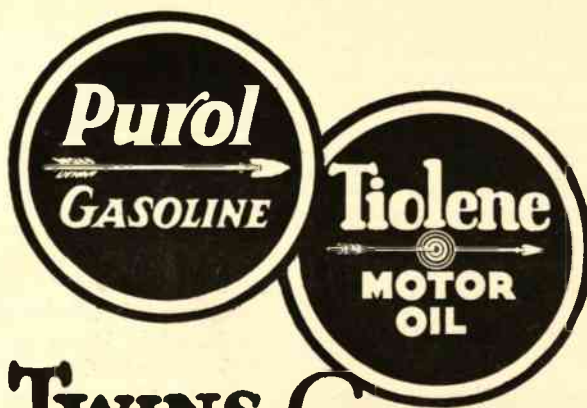
Make fire protection pay you a profit! Richmond Corrugated Steel Doors are the last word—the best word—in fireproof door development. They serve efficiently, pay for themselves in reduced insurance premiums and outlast your building. Sturdy, easy working and good to look at. Built in many different types to fit every requirement.

Over 4,000 buildings of every description, from the modest industrial shed to large factories, storage warehouses and office buildings, etc., contain Richmond Fireproof Doors. Put your door problems up to us; find out why Richmond doors are the choice of hundreds of prominent architects, contractors, insurance men, factory owners and building managers. Yes, find out!

RICHMOND FIREPROOF DOOR CO.

RICHMOND — — — — — INDIANA

"Thirty-Six Years Of Successful Fireproof Door Building"



TWINS of POWER

The Pure Oil Company

U. S. A.

Producers

Refiners

Marketers

Continued from page 29

However, the Statutes of Indiana do grant the further privilege of an appeal to a regularly constituted judicial forum and thus preserve more completely the right of the citizen to have his cause determined in accord with the constitutional guaranties of "due process."

In *Garvin v. Daussman*, cited above, the rule is stated thus, "If the law directing the proceedings affords the property owner an opportunity to be heard, after due notice, in a tribunal competent to afford him relief appropriate to the nature of the case, so that the charge against his property only becomes conclusive after the opportunity for a hearing has been had, it cannot be said that his property has been taken or burdened without due process of law."

Perhaps one of the best and clearest definitions applicable to the present discussion is that given by the U. S. Supreme Court in *Hager v. Reclamation District*, 111 U. S. 701, and *Marchant v. Pennsylvania Railway Co.*, 153 U. S. 380, wherein the rule is stated thus:—"By due process is meant one which, following the forms of law, is appropriate to the case, and just to the parties affected. It must be pursued in the ordinary mode prescribed by the law; it must be adapted to the end to be attained; and wherever it is necessary for the protection of the parties, it must give them an opportunity to be heard respecting the justice of the judgement sought. The clause in question, therefore, means that there can be no proceeding against life, liberty or property, which may result in the deprivation of either, without the observance of those general rules established in our system of jurisprudence for the security of private rights."

Applying the principles thus announced by the courts to the subject matter under discussion it seems clear that the Indiana Statute relative to the elimination of fire hazards is well within the limits of "due process." Considering the extent of the territory covered and the hundreds of communities subject to the operation of the Statute, it would be difficult to devise a law more "appropriate to the case," more "just to the parties affected" or better "adapted to the end to be attained." The Statute gives the parties ample "opportunity to be heard respecting the justice of the judgment sought," and through no proceedings under it can the citizen be deprived of his property "without the observance of those general rules established in our system of jurisprudence for the security of private rights."



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**COMPLETE LINE OF
APPROVED EXTINGUISHERS**

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HOMES
STORES
SHOPS
AUTOS
FARMS
ETC.



THE
"SUPER"
FYR-FYTER
1 QT.
AND
1½ QT.
SIZES

**FOAM, SODA-ACID, PUMP
TANKS, 40 GAL. ENGINES.**



THE FYR-FYTER COMPANY

221 CRANE STREET
DAYTON, OHIO

A Mighty Sentinel

Protecting cities, towns and communities against great fire and explosion damage by dry cleaning plants.

Schlesco-Shure Units are an absolute necessity and should be installed in all dry cleaning plants, as fire and explosion can easily happen.

In twelve seconds fires are extinguished, explosions controlled. Eliminate loss of lives through fighting fires, destruction of clothing and machinery, and expensive shutdowns of plant for repairs.

Because Schlesco-Shure is always on guard, ready to act, like a mighty sentinel.

Approved by the Indiana State Fire Marshall.

Every cleaning and Dyeing establishment should have Schlesco-Shure protection, for their own sake, and for the community's.

All manufacturers can furnish Schlesco-Shure Protection on new washers and tumblers.



Schlesco-Shure Products are distributed to the Dry Cleaning Industry by Glover Sales Company, Kansas City, Mo.

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Low Temperature Drying and Deodorizing Endorsed by Over 2000 Users

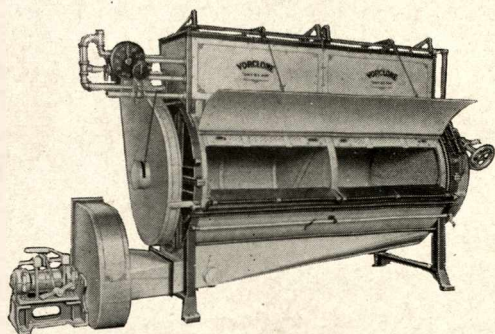
Drying Tumblers in Six Sizes

VORCLONE low temperature drying tumblers can rightfully take their place as the greatest development in the dry cleaning industry. Deodorizing with a Vorclone at low temperature—(125 degrees)—has enabled the cleaner to minimize the element of fire and explosion hazards to a negligible degree.

Vorclone pioneered this method of drying five years ago and still leads as the safest and most efficient drying tumbler. The efficiency of the patented Vorclone suction device makes possible the wonderful results it produces. The Vorclone never recirculates the gas-laden air, a constant supply of new air is drawn through the tumbled clothes during the entire drying period, thereby preventing the expansion of gases and reducing fire and explosion hazards.

Available in the following sizes:

32 x 40, Junior—42 x 40—42 x 60—42 x 90
—42 x 120—46 x 120.



The tumbler shown above is a 42" x 90" with double end driven cylinder.

Auxiliary Drying Cabinet in Three Sizes

THE principle of the Vorclone Tumbler is effectively applied to the Auxiliary Drying Cabinet—the down draft non-recirculating principle.

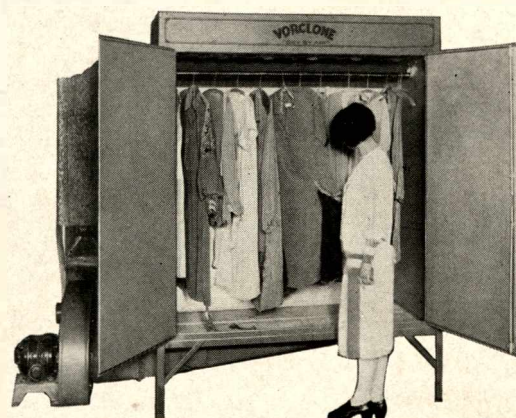
Silk dresses, furs, fur trimmed and beaded garments can be dried by air at room temperature in a few minutes.

Scoured and dyed garments can be dried at room temperature or any variation up to 125 degrees if desired, as the drying period is very short and no injury can befall even the flimsiest material.

The cabinet is equipped with specially constructed coil and can be operated on either high or low pressure steam. Good results are assured in either case. Positive temperature control assures instant change from room temperature to maximum of 125 degrees.

The Auxiliary Dryer is available in three sizes—the 60", 40" and 30".

The 60" and 40" sizes are available with either belt or motor driven fan, while the 30" size is equipped with a motor driven fan only. The 30" Cabinet can be operated from light socket current.



The cabinet shown above is the 60" size.

VORCLONE CO.

30-62 South Bay St.
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Ball Bearing Washers are Safer

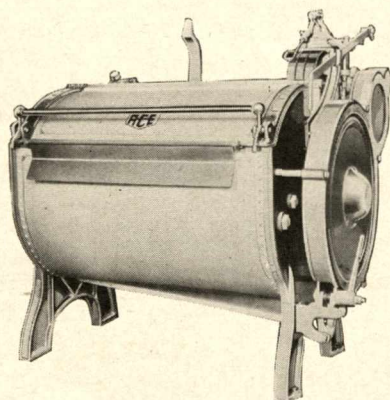
IT is a well known fact that frictionless bearings on the main trunnion of dry cleaners' washers reduce the chances of excessive static generation to such a large degree that washers so equipped are much safer to operate than washers equipped with ordinary babbitt bearings.

Ball and roller bearings are standard equipment on all sizes of Vorclone Ace Washers. In addition to this advanced type of safer bearings, the Vorclone Ace Washer is also equipped with a completely wired cylinder, every loose metal part is wired for static into one compact circuit to assure positive grounding from the main terminal.

Another added feature on every Ace Washer is the rear explosion relief door; the front door is latched and should an explosion occur in the washer it is relieved through the rear door, directing the flames away from the operator.

The Vorclone Ace Dry Cleaners' Washer is available in the following standard sizes:

<i>Single End Driven</i>	<i>Double End Driven</i>	
30 x 40	36 x 54	42 x 54
30 x 48	36 x 64	42 x 64
36 x 48	36 x 72	42 x 72
36 x 54		42 x 84
36 x 64		48 x 120



The above illustration shows the 30" x 40" Ace Washer.

Highest Quality Extractor

THE 26" Ace Extractor illustrated below is accepted as the most highly developed, solid curb extractor available for dry cleaners. It is regularly equipped with an oversize basket, especially reinforced to operate at high speed (1300 R.P.M.) and produces in a nine hour day an equal amount of work to a standard 30" extractor.

The power unit of this machine is of special patented design. It consists of an enclosed disc clutch, running in oil, and bevel gear drive. It accelerates the basket to its full speed with full load in less than a minute, extracting maximum fluid in minimum time.

The drive on the Ace Extractor can be adjusted to suit any conditions in the plant; by simply loosening two bolts the drive pulleys can be moved to any angle—straight drive, angle drive, or any variation from right to left.

There are no twisted belts used in operating an Ace Extractor, making it safer because long twisted belts from mule drives create considerable friction, causing static accumulation which is dangerous.

The Ace Extractor has been in continuous operation for over two years and is giving very satisfactory service.



The pulleys on this extractor can be adjusted for straight or angle drive.

VORCLONE CO.

36-64 South Bay St.

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FIRE INSURANCE AND FIRE PREVENTION.

By JOHN G. GAMBER
State Fire Marshal of Illinois

I know of no problem on which more effort is being concentrated and more money expended than that of the fire waste of the United States and Canada. For a number of years new organizations and agencies have been swinging into line, until the battle front now includes the leading civic and trade organizations of the continent. And yet we are confronted with the strange paradox of the fire loss mounting each year, despite the best efforts of this formidable array.

There is another unique feature to the situation. Fire hazards are for the most part simple and easily understood. We are not battling in the dark for some remote, hidden and unknown cause, as is the medical profession in its fight to conquer the scourge cancer. We who are trying to conquer the scourge fire know the causes; the public knows them; even a small child can understand them; and the remedies are simple. Despite this, the losses mount and the simplest causes of all head the list—matches and smoking; defective chimneys and flues; stoves, furnaces, boilers and their pipes; spontaneous combustion; electricity; sparks on wooden shingle roofs. (I am taking this information from the tabulated report for 1925, compiled by the Actuarial Bureau of the National Board of Fire Underwriters.)

I am not going to burden you with figures, but it is necessary that I quote two or three to bring out my next point. Out of an estimated loss of approximately \$560,000,000 in the United States in 1925, almost \$250,000,000 were attributed to unknown causes. In other words, it was not possible to ascertain the causes of fires which were responsible for almost 4 per cent of the loss. These fires of unknown origin cover a multitude of sins, one of the most glaring of which is the incendiary losses. The losses of unquestioned incendiary origin only amounted to about \$2,000,000 on the face of the National Board's tabulations, but incendiary losses of many times that amount are hidden in the "unknown" column. Some of them are concealed among the well known causes of fire, through cleverness of the crook in setting a fire in such a way that it appears to have been accidental.

I think the alarming increase in our annual fire waste in the United States may be largely attributed to incendiarism. This could be abated if a way were devised to prevent the crook from securing insurance,

or at least keep him from securing too much insurance.

I think the continued large losses from accidental fires are due largely to people relying on the insurance companies to indemnify them if they have a loss, instead of taking it upon themselves to prevent a loss. A way must be found to reverse this order of things.

The longer I am engaged in fire prevention work, the more I feel that co-operation of the insurance companies is essential to any real results we may procure. I believe that the key to success is mutual co-operation.

When we speak of the fire insurance company, we are speaking of one of the greatest institutions in the land. Few people realize the vital importance of fire insurance to the economic life of the country. It is the fabric which underlies our entire industrial and commercial processes. They could not exist without credit and credit could not exist without fire insurance. Anyone who is familiar with business and banking knows that a banker will not lend money to a merchant on any invoice unless the invoice is amply covered by fire insurance. Why? Because, if the store should burn, there would be no security for the loan. Fire insurance steps in and guarantees the security. It is the same with industry and business in all lines. What company would underwrite a bond issue to finance the building of a hotel, apartment or any other building, unless the property were underwritten against fire by fire insurance companies? The most humble citizen could not buy a home on monthly paymentments if there were no fire insurance. At the time he borrows the money to finance his home, he must also take out sufficient fire insurance to protect the loan. When we think of what fire insurance has done for us, we cannot pay too high a tribute to it. It is the keystone on which the whole superstructure of our economic and social life has been erected.

Destructive criticism of an institution which means so much to us as fire insurance, should not be indulged in. Constructive criticism, however, should be welcomed. Any thing I say about the business of fire insurance is offered in a constructive spirit, having in mind the building up of a co-operation between the companies and ourselves

Continued on page 35

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You cannot buy good oils at cut prices.



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For every machine of every degree of wear there is a scientific SINCLAIR OIL to suit its speed and seal its power.

SINCLAIR REFINING COMPANY

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Continued from page 33

which will make a winning drive against fire waste.

Fire insurance for several years has been at the "stop, look and listen" stage. Our tremendous burning rate has produced a loss ratio which has wiped out profits. The only thing which has saved the companies has been earnings on funds invested.

Insurance executives have been assuming a frank attitude in discussing the situation which is hopeful. We are all familiar with the now famous Glen Falls chart, issued by the Glens Falls company several years ago. This chart showed a deadly parallel for a number of years between the fire loss ratio and business failures. Without exception, fire losses traveled upward when business failures increased, and in about the same proportion. When business failures decreased, fire losses followed them in the same proportion. The Glens Falls company estimated 40 per cent of the fire loss as incendiary. One of the leading banks of the United States cited this as a terrific indictment of the business conscience of the country.

At the last convention of the International Association of Fire Engineers, held at New Orleans, a representative of the National Board of Fire Underwriters spoke as follows:

"It has long been recognized that the four cardinal principles of fire prevention are, first, proper building construction; second, inspection and removal of hazardous conditions; third, a campaign of education and publicity; and, fourth, rigid investigation and prosecution of incendiaries. I contend that we may well reverse the order of these four principles and place first on the list the campaign against the incendiary. How much of the total loss is really due to arson will probably never be accurately known, but it is certain that a considerable part of the five hundred million dollar fire loss in this country is not accidental."

I contend that we will not reduce the fire waste until (1) we take the profit out of fires and (2) we make the assured clean up his fire hazards if he expects to carry fire insurance. When we get down to that basis, we will make some real progress.

Suppose I am starting in business and want a loan at the bank. I will get that loan only if I can produce collateral which will amply protect the loan if it is necessary for the bank to foreclose. The chances are that I will be cross-examined by the banker, and my balance sheets, assets and integrity will be very carefully scrutinized. When the banker is convinced that the loan is safe, I may get it.

Of course, the banker insists that I have ample fire insurance coverage. I go to the local agent, expecting, perhaps, to get another cross-examination and prepared to show that I have stock and fixtures equal to the amount of insurance desired. What happens? If the agent is the ordinary kind of agent, he probably will say: "How much do you want?" When I tell him, he may ask: "Is that enough?" And I may end up by buying more than I had expected.

Suppose business goes bad. My notes at the bank are almost due. I face certain foreclosure. I can't see a way out. In a dark hour the thought comes to me: "If this place would burn I could pay out and have a little left out of the excess insurance." I dwell on that thought. Why not make a larger profit for myself? It occurs to me that it was very easy to secure insurance in the first instance. I go back to the same agent or perhaps to another one. At any rate, I learn it is easy to find an agent who will write me what I want. Then I prepare for the fire.

I did not start out to be a crook, but the ease of procuring insurance offered too great a temptation.

Now the bank was lending money to me on exactly the same assets which the fire insurance agent was underwriting. If it is good business for the bank to see that the loan was backed with ample security, is it not as good business for the insurance agent to see that the policy is backed by ample assets? Why should not the insurance agent determine by inspection or other evidence that I actually have the values I am seeking to cover? When I sought additional insurance, was it not up to the agent to determine that I already had some coverage and then to satisfy himself that my balance sheets, stock, etc., warranted the increase I was seeking? There is every bit as much reason why the insurance companies should protect themselves against fraud as the banks.

I mentioned that the banker would take care to satisfy himself as to my personal integrity, my record for success and failure. Banks give a great deal of weight to the character of the applicant. A good many men in the business of lending money place character first in determining the amount of the loan, or whether it shall be made at all. If bankers find it sound policy to give so much weight to character, why is it not sound policy for insurance agents to do likewise? In the last analysis, it is really the individual who is being underwritten. An honest man will not have a crooked loss. A

Continued on page 37

The Real Fire Prevention Fuel

Quick Fire Coke

No Soot—No Dirt—No Smoke
Very Little Ash

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The Graham Glass Co.

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man who has a record of several fires to his credit is likely to have more fires.

I want to take an illustration from another source—life insurance. A life insurance policy will not be issued until the applicant has passed a rigid physical examination and has been pronounced fit. He must also make a showing as to the nature of illnesses he may have suffered in the past, and whether he has ever been rejected by any company.

Now, why should property be accepted as a fire risk unless it can stand a physical examination and be pronounced free from fire hazards? A life insurance company will turn down an applicant with weak lungs. Is not a defective flue as great a hazard for the fire insurance company? Why should not fire insurance companies regard bad electric wiring, defective heating apparatus, rubbishy conditions, and the other common hazards with as much concern as the life insurance companies regard human ailments or the symptoms of such ailments? There is as much reason for fire insurance companies to require property to be free from hazards as there is for life insurance companies to require a clean bill of health. A physical examination should be required of all property before an agent writes any fire insurance on it, and no policy should be issued unless the property is reasonably free from fire hazards. It strikes me that would not only be sound policy for the companies, but fair to policy holders. Why should careful policy holders, who keep their premises in safe condition, be penalized for those who make no pretense of doing so? Why should an insurance company blindly take a risk, without any inspection to determine whether it is safe?

I think the fire insurance application should also follow the line of the life insurance application by requiring certain information as to the past history of the applicant. Where has he resided for a certain number of years past? What has been his business or employment during that time? Has he had any fires and, if so, when, where and under what circumstances? Did he have insurance and how much did he collect? Has he ever failed in business or gone through bankruptcy? This information would give the companies something to check up on. No doubt dishonest applicants would lie, but false answers could be made to constitute the voiding of the policy. The applicant should also be required to show if he has other insurance and, if so, the details of the policies. I believe a stipulation should appear in every fire insurance policy, requiring

the company's consent to any additional insurance in any other company. Failure to secure such consent should void the policy. This would stop the crooks from securing a lot of excess insurance from different agents.

The loss situation has also been complicated by loose and careless adjusting. Companies have been mulcted out of millions of dollars by crooked public adjusters, sometimes because of the connivance of company adjusters, and sometimes because of carelessness or incompetency of company adjusters. There has been too much liberality in adjusting losses. The local agent wants a quick and generous settlement for advertising purposes. He pushes the adjuster. The adjusters often play the role of good fellows to win favor for their companies, allowing a larger claim than warranted. Perhaps the excess is not great in the ordinary run of cases, yet it amounts to a great deal of money in the aggregate. Companies are devoting a great deal of attention to the adjusting problem and are trying to devise means of stopping the leak at this source.

I think that competitive conditions among companies have been responsible for considerable of the grief experienced. In their zeal to produce a larger volume of business, companies have instructed field men to press local agents for more business. The local agent, naturally eager for his commission, has produced all he could. These conditions do not fit in with discriminating underwriting. Careless underwriting is found to be reflected in the loss ratio.

The public must be educated to a proper conception of fire insurance. The average person thinks of insurance companies as disbursing agencies, giving little thought to the fact that they must collect from the public all that they disburse, plus a liberal amount for expenses of operation. He doesn't feel that he has any personal interest in the losses, unless a loss happens to hit him. The idea of fire insurance was born when a group of persons banded themselves together, agreeing that they would collectively make good any fire loss suffered by any of their number. That is the basic idea of insurance today. All policy holders are members of the group. Instead of taking a collection after the fire occurs, a rate is charged. This rate is based on the probable fire loss as determined from past experience. Every person who collects on a dishonest loss is cheating every other policy holder. Every person who maintains fire hazards is playing unfair with the other policy holders. If the people generally had that conception of fire insurance, they

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would realize that they have a personal interest in fire prevention and we might get more generous co-operation from the public.

One of the most discouraging features of our work is the difficulty of convincing arsonists before juries. I realize, of course, that it is usually difficult to secure sufficient evidence to convict, but even when we do have the evidence juries often return verdicts of not guilty because they do not want the "poor fellow" to lose his insurance. It is about time juries woke up to the fact that verdicts of this kind are perpetrating a robbery on the public, not the insurance companies.

It takes a jolt to arouse the public and this jolt may take the shape of a proposal to raise rates so as to make the business again profitable to the companies. I think the public will become very much interested if that proposal should be made, but I do not think that is the remedy. The remedy is for the insurance companies to adopt a program to end, so far as possible, the evils which have boosted the burning rate. Experience has shown that fire prevention efforts cannot make headway in face of insurance practices which tend to encourage fires, or at least do not discourage them. I believe the insurance companies are earnestly desirous of formulating a practical program to meet the situation. I think we should insist that they do so, and give them all the assistance and co-operation we can in so doing.

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Fort Wayne

Indiana

IMPORTANCE OF FIRE PREVENTION IN CITY SCHOOLS.

By W. W. BORDEN

Superintendent of City Schools, South Bend, Indiana



We hear much during these days concerning fire prevention. It is not a new subject. Volumes have been written on it. Public lectures have been delivered with fire prevention as the subject. The screen has shown the horrors of the flames to millions. And yet—the extent of fire destruction has not lessened. The need for careful consideration of fire prevention has steadily increased within recent years.

Some writer has said that fire is man's best friend—and bitterest enemy. When we think back over the news reports of school fires within the past few years, we are amazed at the extent to which this peril has been allowed to run.

The city school system, as well as the rural, has some definite responsibilities to meet in the matter of fire prevention. These may be divided into direct and indirect efforts, one equally as important as the other.

Of course, every educator recognizes the need of safety in the matter of school buildings and premises. Buildings of fire-proof design and materials are now being constructed throughout the country. Architects in planning the new building keep paramount the requisites for safety from fire hazards. School officials insist on buildings being kept free from all rubbish, particularly inflammable refuse. Janitors are instructed to exercise unusual precaution along this line.

The State has recognized the dangers accompanying school fires and has provided by law for the monthly fire drills. Every effort is made by the local school system to

make this law more effective by the seriousness with which the letter of the law is enforced. No frivolity accompanies the fire drill. It is not considered by the students as a "false alarm" nor as an event which calls for general merriment. It is a part of the regular instruction of the student and prepares him for action in event of a fire in the school or any other building.

These items are important. They are becoming more favorably recognized as agencies through which the public schools aid in the conservation of life. They are direct means of preventing the loss of life and property because of fire.

There is another type of agency which the public school too often overlooks. It is the indirect method of fire prevention. By that, I mean individual instruction in the dangers of fire.

We recognize health education as a vital part of the school program. Surely an important phase of health education is fire prevention. The common fire dangers may be pointed out; simple lessons in the proper use of electricity and gas may be given; the hazards of playing with fire may be cited—all helping to develop a sense of carefulness on the part of each child.

No school program, urban or rural, is entirely complete until it provides for the important subject of fire prevention.

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FIRE PREVENTION IN THE SCHOOLS OF HENDRICKS COUNTY

By GEORGE H. REITZEL

County Superintendent of Schools, Hendricks County, Indiana



When one is brought forcibly up against the startling fact that fire destroys ten school buildings each day of the school year or that for every two school buildings built in the United States one is burned, then we can begin to understand the importance of the work being done in our State by the Indiana Fire Prevention Bureau and why the emphasis placed by it upon the educational program.

Hendricks county school system believes in the slogan of the Indiana Fire Prevention Bureau, "An Ounce of Prevention is Worth a Pound of Cure." And believing in this slogan, we try to observe in our school system the law regarding fire drills.

Each school observes the State regulation as to fire drills at least once a month and many times as often as once a week, using all exits and fire escapes.

Some time during the first week of school the various teachers explain to the students under their charge the importance of leaving the building quickly and in good order. They also explain the various ringings of the electric bells and lay emphasis upon the fire alarm ring or bell. Students are instructed to leave all books, clothing, etc., as they are when the alarm sounds and depart from the room and building at once. This period of instruction is generally followed by the information, "We will now ring the fire bell and see how orderly and how quickly we can leave the building." The children respond

to this alarm without fear and in most cases in good form. About one week later the children of the first four grades are again told that we are to try the fire drill. This time all teachers may know the fire gong is to sound but children of upper grades are not aware of such action. Observations are made by all teachers and then all defects of the system as well as the fine points are discussed by the teacher or the principal before the children.

This much of our system being perfected in the first two weeks of school, we are then prepared for any emergency and pupils are intelligently prepared to leave the building not only in the least possible time but without a panicky feeling.

All schools of Hendricks County have the same general plan, but each school may use its own original ideas if they are satisfactory.

One school in which I observed the fire drill had elected or appointed what they termed "Fire Chiefs." These boys and girls assisted the teachers in making sure that all the children were out of the building and that the lines or rooms used the proper exit and kept their lines in good form.

Other schools had their "Fire Horses" whose duty it was to see that the doors to all exits were free from obstructions. These boys stood guard over the exits to see that no child crowded or shoved when passing through, to assist a child who might stumble or fall, to see that the exits were not congested at any time.

A few of our schools have water pressure and fire hose. All consolidated buildings have fire extinguishers. In these schools the older and larger boys are organized into a fire fighting company and are taught how to attack and fight a fire. Two or three small fires have been extinguished in past years by this method and the loss was slight as compared to what might have happened.

Hendricks County school officials believe whole-heartedly in fire prevention, not only in the school but in the home. They believe that proper steps should be taken to educate the child while in school so that when he leaves the school he will be a better citizen.

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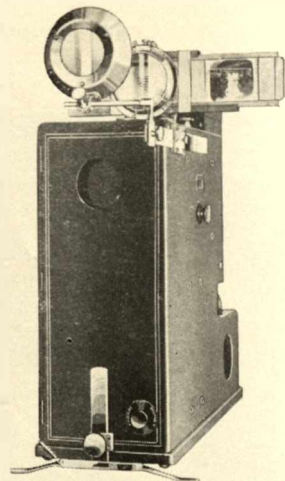
The safest projector made and the ideal machine for all non-theatrical use. Shows motion pictures, still pictures from film and standard stereopticon slides. Uses standard 1000-foot reels. Has Underwriters' Laboratories label. Motor operated. Equipped with 1000-watt incandescent lamp. Complete and ready to operate.

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Chicago, Illinois



Front view of Acme Model S. V. E. Type G combined motion picture projector and stereopticon.



SCIENTIFIC FIRE PREVENTION.

By T. Alfred Fleming

Supervisor of Conservation Department, The National Board of Fire Underwriters

A study of social service work has taught us the lesson that it is necessary to treat both disease and crime by beginning at the source from which each emanates. A comprehensive study of the water and milk supply of a city has frequently saved a continuous epidemic of typhoid. Other conditions of disease are treated along similar lines. Crime finds its inception very often in home training. Disintegration of the home means shattering of the moral fibre which establishes character.

The plague of fire waste has reached its present huge proportion because we have been trying to treat it backward. We have started at the wrong end. In the first years of fire prevention endeavor we simply applied a little salve to the sore without studying the cause. In years of association with fire prevention and protection inspectors and engineers, I have been amused by many of the conceptions held in regard to the real causes of loss of life and property, and their possible elimination. Fire waste must be attacked in exactly the same method used in tuberculosis, small-pox, or any other disease. It must be treated scientifically, courageously, and continuously.

First, there must be a campaign of education. A public educated so as to understand the causes of fire waste and the dire results which follow in its wake will respond with unusual enthusiasm to any movement to enhance protection. This educational campaign should be carried on through the schools, clubs and commercial organizations, not intermittently but continuously. Knowledge is the fount of every campaign which has procured results. Our people must be aroused or they will never give support to any cause, no matter how worthy it may be.

Second, a systematic and careful inspection of buildings. The importance of critical and continuous inspection is being real-

ized more and more as the results of such campaigns are tabulated. Rubbish accumulations are always fire and disease breeders. Periodic visits of a Fire Inspector engenders better discipline in the employees responsible for the housekeeping of the property. Good housekeeping will eliminate at least one-half of the fires which would otherwise have destroyed industry, wrecked corporations, and deprived employees of their weekly pay check. A carefully organized inspection system also has a very wholesome effect where any moral hazard exists. The use of the Home Inspection Blank for residential inspection by the Boy Scouts or school children has been particularly profitable in eliminating hazardous conditions of the home.

Third, permanent construction improvements. The serious effects of improper construction are not fully realized by the general public. In almost every city there is a so-called "Black Block," where bad construction, narrow streets and poor physical protection supply the essentials of a dangerous conflagration area. One per cent of the number of fires produces over sixty per cent of the fire loss. This should be a matter of first concern to business interests whose investments are made within the danger zone. The installation of sprinkler systems, widening of streets, and protection of vertical and horizontal openings will greatly alienate the hazard until the buildings can be replaced by superior standards of safety construction. Good building codes, rigidly enforced, are the great hope of the future. The elimination of shingle roofs, of course, should be one of the subjects of first consideration. Every community has its own fire hazards and these should be studied locally, not spasmodically, but continuously, so as to assure its citizens of the greatest degree of fire safety.

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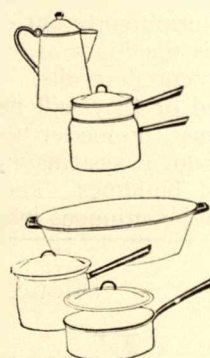
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WHAT A VOLUNTEER FIRE DEPARTMENT DID IN A TOWN OF 5000.

By WILLIAM KERFOOT

When appointed chief in 1922, the first thing we did was to inspect every business house in the city from basement to garret. We also inspected garages and factories. Three hundred orders were issued to owners of property.

About two weeks afterward I went around to check up on the orders we had issued and found that two hundred and fifty-one had complied with them. Only ten received orders from the State Fire Marshal.

We worked about forty-eight hours at this time without pay.

The second year we went before the Council and asked pay for the men. Fifty cents an hour was granted.

During Fire Prevention week, my men and I gave talks at the various churches, before Rotary and Kiwanis clubs, and the school children and gave fifteen hundred questionnaires to the school children in leaflet form. We received about twelve hundred filled out. We put on a fire prevention show

for the school at the Opera House, and had about fourteen hundred in attendance.

We called a meeting for all boys from the age of six to fourteen years. Twenty-five responded. We divided the town into four wards, assigning a certain number of boys to each ward and gave them inspection cards to inspect the town outside the business district. A prize was offered for the greatest number of inspections.

Each year we took our inspection boys to the Northern Indiana Volunteer Firemen's Convention and each year the Chamber of Commerce allowed me twenty-five dollars to help pay expenses. By getting free transportation we met our expenses without spending much of our own money.

After three years of effort our city was changed from Class 4½ to Class 4. That briefly tells what we actually accomplished.

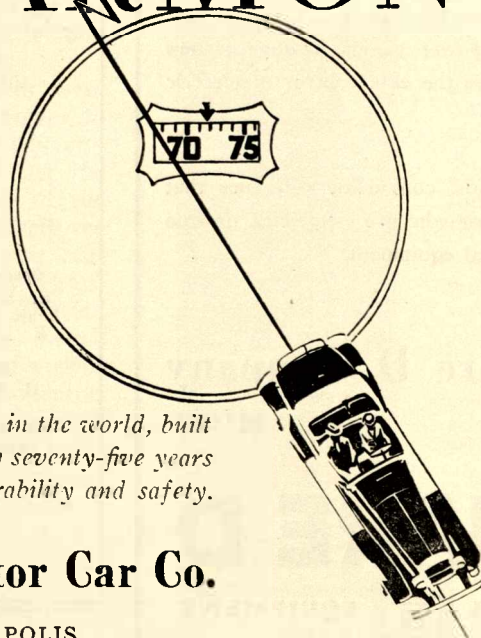
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For 24 years, Square D has faithfully followed one unchanged business policy—never to manufacture a product which is not commercially practical, nor one which does not contribute to the safer, more efficient, more economical use of electricity.

To this policy (and to the high engineering standards it has enforced) may be credited Square D's rise to leadership in the safety switch industry, a position solidly based on more than 4,500,000 satisfactory installations.

It is only natural that public confidence in the Square D Safety Switch should be extended to all products bearing the Square D name— industrial switches, power panels, voltage testers or other devices for the safe control of electric current.

This fact is the most convincing reference that can be given to those who use electricity, or who buy or sell electrical equipment.

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DETROIT MICH.

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Fire Waste is the fire-brand that causes three-quarters of the five hundred seventy million dollar annual fire loss. Throw away this brand! Substitute the shield of Fire Prevention!

Property owners who really value their possessions will not only make every effort to prevent fires, but in addition, will take precaution against the possibility of fire by insuring. Fire Insurance acts when prevention fails.

For nearly three-quarters of a century **THE HOME OF NEW YORK**, through conflagrations and the myriads of yearly individual losses, has adjusted its claims fairly, promptly and willingly. Only dependability and financial strength could build such an enviable reputation.

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Manager

Francis B. Wreaks



THE TREND TOWARD SAFETY.

By K. H. BRONSON

Square D Company, Detroit, Michigan

It is remarkable how far, in the last ten years, we have gone in the matter of reducing fire and accident hazard.

And it is even more remarkable how many people there are today interested in safety when we remember how few thought of it a few years back.

The credit for this remarkable and highly desirable change in attitude belongs to those worthwhile agencies distributing information: state and municipal inspection authorities, fire prevention bureaus, and insurance companies. And in addition, credit is due those manufacturers who held strictly to the policy of building a better product rather than one which could be built at a lower first cost, whatever the consequences.

Take, for example, the electrical industry. It has not been many years since electricity was charged with a huge fire loss. In many cases the charge was correct and in many others it was not, but the shabby material used and the slipshod way of installing it made the charge a justifiable one.

Then the reform movement started. States interested themselves in fire loss statistics and municipal authorities and inspectors brought them to the attention of industry and business men generally.

New standards of wiring were written and inspection was tightened. These higher standards and their enforcement had an immediate effect in the reduction of fire hazard.

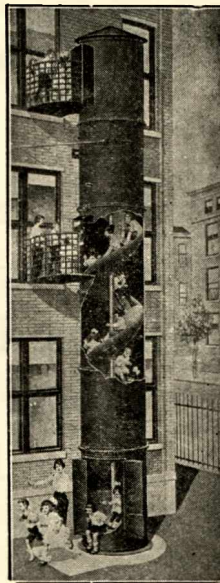
Reputable electrical manufacturers were pleased to do everything in their power to help to raise the electrical standards and make it possible for electricity to get the protection which it deserved. One of the first manufacturers to see a way to help the state and municipal authorities in their crusade against fire was B. D. Horton, President of the Square D Company, Detroit, Michigan. In the exposed knife switch then in use, Mr. Horton recognized a definite fire and accident hazard. No matter how much care had been taken in the electrical installation, so long as the exposed knife switch was in use, there was a great hazard, right at the point where the workman was most sure to come in contact with it, the switch. To eliminate this hazard, Mr. Horton brought out the Square D Safety switch, completely enclosing the live parts and eliminating the hazard. There was also a great deal of tampering with fuses. The fuse is to an electrical circuit what a safety valve is to a steam boiler. And tampering with

the fuse is liable to have the same effect as tampering with the safety valve of a boiler. So long as the fuses were exposed there was little to prevent anyone from tampering with them, but the Square D safety switch provided a means for enclosing the fuses as well as the knife switch, making it possible to keep these fuses away from everyone except authorized persons. So another hazard was removed.

Encouraged by the tendency to raise electrical standards and the interest taken by both state and municipal officers, other electrical manufacturers interested themselves in electrical safety and brought out products to conform to the new high standards.

Today, electrical standards are high and getting higher, thanks to the efforts of fire commissions, inspectors, utilities and reputable manufacturers. No longer is the fire of unknown origin assumed to be caused by electricity. A national campaign is now under way to bring to public attention these high electrical standards and to urge home builders to have their electrical work done by reputable electricians who understand the high standards and adhere to them.

SAFETY



is assured at all times by using the Logan **SPIRAL SLIDE ESCAPE**, which has a capacity equal to that of 3 ordinary stairways. It's a smooth slide to safety, no stumbling or falling.

How different from the hazardous unsightly step escapes. The peril of attempting to escape on one of these spidery step contrivances is as great as in the fire itself.

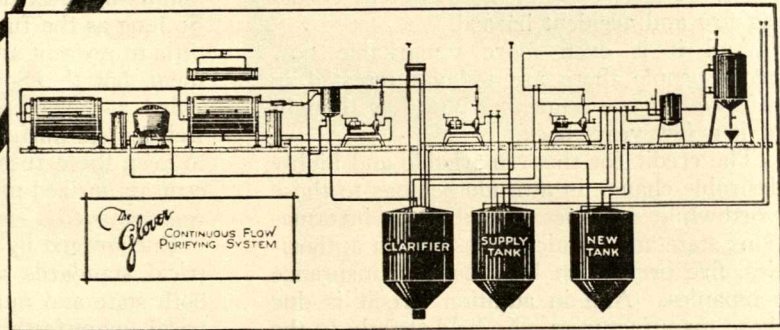
Write for full information, giving height, or our engineer will call—no obligation.

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2. It clarifies the solvent below ground.
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REDUCING THE FIRE HAZARD IN THE DRY CLEANING INDUSTRY.

By ROY DENNEY

Director of Research, The Glover Sales Co., Kansas City, Missouri

It is just recently that Dry Cleaners have taken matters in their own hands to overcome the hazardous conditions surrounding their industry which kept out needed capital and greatly retarded its growth. The largest advance made in this direction was in 1924 when "Dixie" Stoddard, then president of the National Association of Cleaners and Dyers, with the help of his associates, drew up specifications for a "safe" cleaning solvent to replace the highly explosive naphtha and motor fuel then in use. These specifications called for a new cut from the crude oil which eliminated the light and highly inflammable portions without increasing the heavy ends so hard to remove from the garments. Stoddard Specification Solvent is now widely used in the larger cities and is gradually being adopted in the smaller communities. Insurance companies are helping spread the gospel and before many years it is expected that cleaners will be required by law to use "safe" solvents exclusively.

The cause of most cleaning plant fires, and the one of which the housewife is unaware when she does her own dry cleaning, is static electricity. Friction between silk or wool fibres builds up a charge of negative electricity which finally becomes great enough to cause a spark. Cleaners have recognized this danger and provided against it somewhat by slightly steaming the garments before cleaning and also allowing steam to escape in the cleaning room. It is known that if the relative humidity is kept above 55 that the little particles of moisture act as grounding devices in carrying off the static before a sufficient charge is developed to create a spark. Equipment manufacturers have done their share in developing humidifiers and grounding devices for their machines. The Association has done its best to educate the industry and at the same time carry on the immense amount of research and experimental work which needs to be done.

Besides static there are many other causes of plant fires, such as matches left in the clothing, the scraping of belts and machinery, the sparking of motors, smoking, etc. Keeping the floor free of solvent, proper ventilation, underground clarification and other precautions are being adopted to prevent them, but that they will be totally eliminated is not to be expected. The industry, therefore, is in need of cures as well as preventatives. To put water on a gasoline fire is to spread it wider, for the solvent being lighter is splashed about while the water promptly sinks to the bottom of the vessel. Every plant is required to have at hand a chemical extinguisher, containing fluid which will float on the solvent and blanket the fire. In addition, quick opening steam lines to be opened by the operator at the first sign of fire are required. The steam forms a blanket which as it settles downward excludes the air and thereby chokes the flames. Next to Stoddard Solvent probably the most important contribution to the industry as regards fire control has been the development of the Schlesco-Shure Automatic Steam release valves. As 90% of the fires originate inside the machinery, these valves for the most part are attached directly to the equipment. Immediately a fire or explosion occurs a fusible link either parts or is jarred loose, causing steam to shoot into the interior and smother the fire before it has a chance to spread or do harm. Should the door of the machine be open an ingenious arm on the Schlesco-Shure unit pushes it closed so as to bottle up the steam within. This is the only device of its kind listed by the Underwriters and the time will soon be when the insurance reduction it brings about will alone justify an installation.

A great future awaits the dry cleaning industry, but just how soon it comes into its own will largely depend upon how rapidly the causes of fire, its prevention and cure, are generally understood.

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The increasing construction programs of municipalities have brought before public officials the importance of the selection of a proper conduit for a successful underground installation.

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RURAL FIRE LOSSES

By C. S. MASTERSON, *Director of Fire Prevention and Control Department
of the Indiana Farm Bureau Federation*



Rural communities are poorly equipped to combat fire, consequently the losses are relatively heavier per fire experience than cities which have better protection.

The average rural fire loss per farm, for last year in the United States, was \$26.27, with Indiana less than this average, yet an enormous loss in the aggregate was suffered by Indiana's rural population.

It would require seven thousand five hundred acres of our best timber to have rebuilt the rural fire losses suffered last year in the United States and the pity is that seventy-five per cent of this fire loss was needless, could have been prevented by caution and preventative measures.

Building materials have become more and more expensive and no doubt will continue to mount higher until the costs have become almost prohibitive on the farm, so it becomes increasingly necessary to conserve farm improvements.

It is necessary to create a general sentiment for caution and preventative measures against rural fire losses, because caution exercised by part of the rural population will not prevent fire loss by those who do not exercise caution and so building materials will cost all rural dwellers more because of the needless fire loss of the careless.

Sparks from flues are a prolific cause of rural fires and an old shingle roof is an invitation to fire from sparks. If such buildings

can not be recovered with some fire resisting material, they should be painted so as to reduce the hazard and the flue should be kept free from accumulating soot. Either swab out the flue, or when the roof is damp, burn out the flue. Zinc clippings thrown on a bed of live coals in stove or furnace will clean the flue. Cracked and otherwise defective flues should have immediate attention because defective flues cause heavy fire losses each year. A defective flue is almost certain, sooner or later, to prove disastrous.

Spontaneous combustion takes heavy toll every year and much of this loss is avertible. New hay should never be stored on old hay without a liberal supply of salt being scattered through the new hay while being mowed away. A handful or two of salt thrown over the new hay will not only help cure and season it, but will almost eliminate the danger of spontaneous combustion.

The oiled mop, too, is a frequent cause of combustion, as are also oil soaked rags, and other rubbish in basement, closet, spare room or garret. Dry cleaning in the home, in which gasoline, benzine or other highly inflammable materials are used, frequently cause fire and sometimes loss of life. Substitute carbon tetrachloride as a cleaning agency instead of these dangerous materials. Caution in the use of gasoline and kerosene will avert a great many fires.

Kerosene brooder house stoves frequently cause fire and great care should be exercised with them and with incubators. Several fires in Indiana were reported this summer from these causes.

Every farm should have some means of combating a fire. Few have means of using water, even if they had an available supply, but all may have some type of chemical extinguisher, of which there are many types and varieties.

Insurance, as necessary as it is, never prevented, nor extinguished a fire, nor saved a dollar's worth of property. It merely distributes the loss among policy holders so that some one must pay every fire loss in which the property burned is insured. Those who do not have a fire loss help pay the loss of those who do, but this does not get at the root of the matter.

First, let every rural family try to prevent by caution and preventative measures, fire losses, and also equip so as to combat a fire when one occurs and our insurance will become less burdensome, for after all, this is the way to reduce insurance rates.

Electricity Is Safe

Where These Simple Rules Are
Observed

If a fuse blows out you are overloading your wiring system or using a defective appliance. Do not screw in a larger fuse. 15-ampere fuses are usually large enough for house circuits.

Do not try to install additional wiring in your home unless you are an electrician. Your best insurance against fire is good wiring properly installed.

Wires must never be tacked to walls or hung on nails. If the insulation wears through there is sure to be trouble.

Use porcelain, not metal, sockets in bathrooms and basements so that if a person standing on a damp floor touches one, there is no possibility of shock from a defective device.

Never set electric irons on combustible material. Always use the metal stand provided.

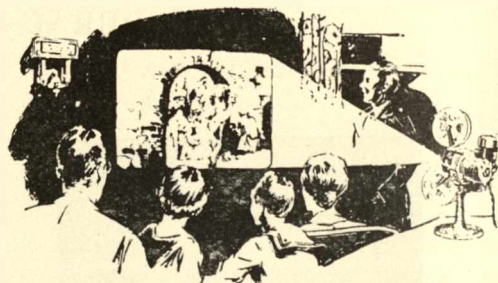
Lamps in clothes closets should never be left burning when door is closed.

Never use irons to warm beds in winter. Heating pads are made for that purpose and are absolutely safe.

If the standard length cords on lamps or other portable appliances are not long enough, do not clutter up your rooms with extension cords. They are dangerous as well as unsightly. What you need is more wall outlets.

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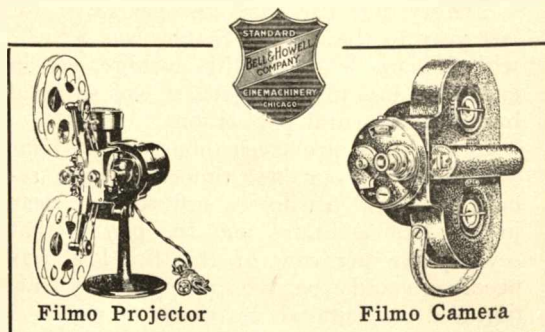
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MAKING SCHOOLHOUSES SAFE FOR CHILDREN

By Peter Sletterdahl

"Come with me and I'll show you why this schoolhouse isn't safe for boys and girls," said the Deputy State Fire Marshal positively.

The principal looked at his watch meditatively.

"With a small expenditure of money and a few orders to your janitor the building can be made much safer," continued the Deputy State Fire Marshal.

"All right, I'll go through the building with you and let my class wait," said the principal rising. "Where do you want to start?"

"In the basement where most of the fires that destroy schoolhouses originate," replied the official.

The principal and the Deputy State Fire Marshal left the office and went downstairs directly to the boiler room.

"Professor, your janitor uses this place for the storage of kindling, paper, oil, desks, rubbish, rags, and other things, as you see," remarked the Deputy State Fire Marshal.

"I know these should not be stored here, but there doesn't seem to be any other place for them," the principal said.

"That isn't a very good excuse for permitting a dangerous condition."

"I know it isn't."

"A fire can easily start in this inflammable stuff. A hot coal dropped during the removal of ashes might be kicked into that pile of waste paper. What would happen?"

"A fire," answered the principal.

"Exactly. If the janitor wasn't around, it wouldn't be long until the whole room became an inferno. There's that pile of coal. No fire-proof wall protects it. Above you are the exposed joists. Leaping flames could easily reach them and the floor on them. The heat from the boiler has dried the joists so as to make them highly inflammable."

"What do you want done?"

"The place should be given a thorough cleaning. Waste paper ought to be burned daily. The coal must be protected by a wall of fire-proof material between the boiler and the fuel. A ceiling of asbestos board or "rock" board will do much to make the building freer from the menace of fire."

"The reason you see so much waste paper here is because we bale it and sell it," explained the principal.

"You will agree with me that the boiler room is the most dangerous place in the building to store waste paper."

"Yes, you are right."

"I don't see any fire extinguisher," said the inspector looking around.

"There isn't one in the building," the principal informed him.

"Then at least three of them must be provided immediately. There ought to be one in here and one in the main hall of each floor."

"What kind of fire extinguisher do you recommend?"

"For the average fire danger a two-and-one-half gallon soda acid type extinguisher will be sufficient. Where the danger is from electricity a half-gallon carbon-tetra-chloride extinguisher should be provided."

"How much attention do these extinguishers require?"

"The soda-acid type should be filled each year without fail and a tag on which the date of re-charging is written should be attached to the extinguisher."

"How about the other type?"

"The carbon-tetra-chloride type should be examined at least once a year to make certain of a perfect operation. If they are not full, more of the carbon-tetra-chloride should be put in. Now I want to call your attention to another fire hazard."

The principal followed the Deputy State Fire Marshal into the hallway of the basement. The official opened the door of a closet directly underneath the exit.

"Professor, this closet must not be used for storage. The toilet and towel paper will make a fire possible. Suppose a boy is down here smoking a cigarette when you (or the janitor) come along. Well, he'll want to throw his cigarette somewhere. He might throw it in this closet. Then there is the possibility of a fire. The exit is above us. You see what that means. Everything in the closet must be removed and the door nailed shut so that the closet can't be used. Never under any circumstances should a closet underneath an exist be used for storage. In many schoolhouses I find closets underneath stairways jammed with inflammables such as paper, rags, paints, and oils. I cannot understand why the danger of this isn't seen. A fire in such a closet would block the stairway and possibly cause a tragic panic. Now we'll go to the domestic science room."

A girl was filling the tank of an oil stove when they entered.

"Where do you store the kerosene?" asked the Deputy State Fire Marshal.

"In a tank outside about a hundred feet

Continued on page 55

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If you are a believer in Fire Prevention then you should unite your efforts with the other policyholders of this Company, and get the benefits to which you are entitled.

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Trucks equipped with latest fire prevention devices.



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Continued from page 53
from the schoolhouse," answered the principal.

"Fine. I was in a schoolhouse yesterday where a kerosene tank was kept in the boys' toilet. I ordered it removed at once. The janitor told me that a boy opened the faucet of the tank one day and thirty gallons of kerosene ran out over the floor. Luckily nobody threw a match into the kerosene thinking it was water. You know that boys will sometimes smoke in a toilet and drop a burning match carelessly."

"Yes, I know boys will do that in spite of everything that can be done to prevent them," agreed the principal.

"There are some things in the manual training shop I want you to see, Professor."

"Didn't you find everything all right there?"

"No, I didn't."

On entering the manual training shop the Deputy State Fire Marshal pointed at a large box filled with shavings.

"That's bad," he said emphatically, "There is more than a week's accumulation of shavings in that box. You must instruct your janitor to burn all shavings every day."

"I've told him to burn the shavings daily, but he doesn't do it."

"Have him discharged then and try to find a janitor who will obey orders."

"He's been here for ten years."

"Maybe that's what's wrong with him."

"I don't like to antagonize him because he's got a lot of friends."

"I'll speak to the trustee. I know he won't stand for a janitor who does things in a slipshod manner."

"I wish you would."

"The trustee must immediately furnish a covered metal container for these shavings. Then if a fire should start, it would be in a restricted space."

"Now over there you see varnishes, paints and oils standing around in cans on the bench. They must be stored in a steel cabinet or other metal container. The reason for this is obvious. There are a lot of oily rags laying here and there. Spontaneous combustion has been the beginning of more than one serious fire. All oily rags should be kept in an iron pail with a cover that fits tightly over it. The odds and ends of lumber in a pile yonder go to make a nest for a possible fire. Either burn them in the boiler or stack them so as to minimize the hazard."

"I'm glad you came," said the principal enthusiastically. "Here I have been going around the building for several years, but I didn't notice these little things which might be the cause of a fire. Now that you call

them to my attention, I see them."

"We'll go upstairs next."

"As you say."

The two men talked about fire prevention as they walked upstairs.

"Look here, Professor," said the Deputy State Fire Marshal as he went over to a door of exit, "The doors swing inwards. The doors must be made to swing outwards. In case of a fire a stampede of children against the doors would spell death for many of the boys and girls in the building. At Collinwood, Ohio, 172 children and three teachers were killed in a schoolhouse fire a few years ago. All of them might be alive today if the doors of the schoolhouse had opened outwards instead of inwards. All exit doors must be equipped with panic release bars so that a rush of children will easily open them."

"These doors are kept open most of the time."

"A fire might start somewhere in the building when they are closed. That's why it is so important to have the right kind of exit doors."

"I don't want you to think I defend these doors. I just was trying to tell you that I do the best I can with doors of this kind."

"I understand. It isn't your fault the doors are here contrary to law. I'm going to have these doors changed or know the reason for such laxity. The present State Fire Marshal is using his power to make every schoolhouse in the state safe for boys and girls. He'll see that my recommendations are not ignored indefinitely."

"You will see that the trustee is notified."

"I certainly will. An official order will be sent to him and he will be given a certain length of time to make this building safer."

"I'm glad of that."

"How often do you hold fire drills, Professor?"

"Well, I-I-," stammered the principal.

"You know the law."

"Yes, but you know how it is. A man let's a thing slip his mind now and then."

"You had no legal right to draw your salary unless you complied with the law. A fire drill must be held every month. There is no good excuse for not holding a fire drill at least monthly."

"I'll hold a drill every month hereafter."

"It is absolutely necessary that you do. What are you doing to teach the children fire prevention?"

"Not very much."

Don't you think it would be a good idea to teach the children something about the dangers of fire?"

Continued on bottom of page 57

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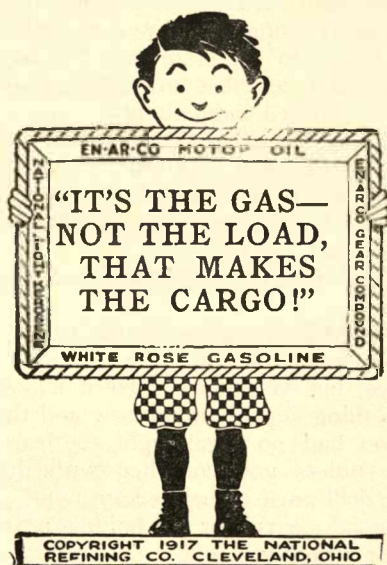
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THE PROPER STORAGE OF GASOLINE

Standard Oil Company

When it is realized that the U. S. Bureau of Mines reports that for the month of July, 1927, the production of crude petroleum in the United States reached the astounding total of 78,333,000 barrels of 42 gallons each, some idea can be had of the immense quantities of petroleum products, including gasoline, handled by the industry each month. The above figure represents a daily average of 2,527,000 barrels, while "runs" to refinery stills over the same period amounted to 2,319,000 barrels daily. This utilized 80% of the manufacturing capacity of some 332 operating refineries in the United States. From this crude petroleum charged there was produced in July, 1927, a daily average of 907,000 barrels of gasoline or about 28,118,000 barrels during this 31 day period. To safely and efficiently manufacture, store, handle, and dispense this tremendous amount of gasoline is one of the "every day" tasks of the petroleum industry. It is apparent from the above that thousands of tanks are required, in refineries, on tank farms, and at storage terminals, and lastly in bulk marketing and service stations, to store against possible demands this amount of gasoline.

To economically and efficiently distribute this product from the refinery to the ultimate consumer, it is necessary to establish bulk storage depots or stations, to which gasoline can be shipped in large quantities by tank car or barge from the manufacturing plant, and from which deliveries can be made by tank truck to the service station. It is particularly with the storage of gaso-

line at such bulk stations that this article will deal.

In general, gasoline storage at such stations consists of all-steel, above-ground tanks, the size usually varying from a few hundred to a few thousand barrels in capacity, depending upon particular cases. A 10 ft. diam., x 30 ft. high size (roughly 400 barrels capacity) is probably typical of the average size tank in use at such stations, throughout the country. There are certain fundamental considerations that must be embodied in any such tank, regardless of size, to insure both efficient and safe storage. These are, proper factor of safety in tank design; the making of the tank tight against liquid and vapor leakage; protection of the tank against undue hazards where such hazards exist; and in particular cases, the installation of protective devices such as earth-dykes, portable fire-extinguisher equipment, etc.

A tank that is gas- or vapor-tight is an exceedingly safe structure from a fire hazard standpoint. To realize such gas tightness requires the use of proper thickness of plate material, adequate caulking of all seams and close and efficient riveting. Further, all openings should be tightly and properly closed and it is of extreme importance that adequate venting devices be installed. These prevent the accumulation of undue pressures or vacuum in the tank and also assist, in general, in the conservation of product, and minimize the explosion-hazard in cases of fire in the tank or around same. Where a number of tanks are built at a

Continued on page 59

MAKING SCHOOL HOUSES SAFE

Continued from page 55

"A fine idea. I'll begin right now. Will you talk to the children if I call them together in the assembly room?"

"Certainly."

A few days later the trustee within whose jurisdiction the school building was located received the following orders from the State Fire Marshal:

1. All exit doors must be made to swing outwards and they must be equipped with panic release bars.

2. The joists of the boiler room must be protected by a fire-proof ceiling.

3. Closets underneath the exits must be made free from storage and the doors opening into them must be nailed shut.

4. A fire-proof bin must be provided for

the coal in the boiler room.

5. Three fire extinguishers of the soda acid type, two-and-on-half gallon size, must be installed, one in boiler room and one in each main hall of building.

6. Varnishes, paints, oils, rags, of manual training shop must be stored in a steel cabinet or other metal container.

7. Janitor must be instructed to prevent accumulations of inflammable material.

8. Principal must be instructed to comply, with the law pertaining to fire drills.

"The State Fire Marshal won't find it necessary to compel me to co-operate with him," the trustee mused as he finished reading the orders. He happened to be one of the better type of public servants and was, therefore, more than willing to do his part to make schoolhouses safe for children.

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SUR PLUS TO POLICY HOLDERS — \$29,110,575.98

Assets		Liabilities	
Bonds & Mortgages	149,425.00	Capital	3,500,000.00
U. S. Liberty Bonds	518,200.00	Surplus	25,610,575.98
Government, City, Railroad and other Bonds & Stocks	59,564,972.90	Reinsurance Reserve	21,162,599.90
Cash in Banks and Office	2,434,964.77	Losses in Course of Adjust- ment	8,362,821.00
Premiums in Course of Collection	8,827,461.77	Commissions and other Items	7,100,000.00
Interest Accrued	111,020.32	Rserve for Taxes	1,005,000.00
Reinsurance Recoverable on Paid Losses	134,952.12	Reserve for Depreciation	5,000,000.00
	\$71,740,996.88		\$71,740,996.88

Progress since Consolidation in 1899

	Assets	Reserve	Surplus
Dec. 31, 1899	529,282.59	28,832.54	2,028.94
Dec. 31, 1910	5,255,362.12	1,936,224.86	2,365,363.37
Dec. 31, 1920	42,765,374.55	16,593,764.16	11,361,311.89
Dec. 31, 1925	67,922,096.58	20,265,572.73	24,161,943.85
Dec. 31, 1926	71,740,996.88	21,162,599.90	25,610,575.98

E. C. Jameson, President	W. L. Lindsay, Secretary
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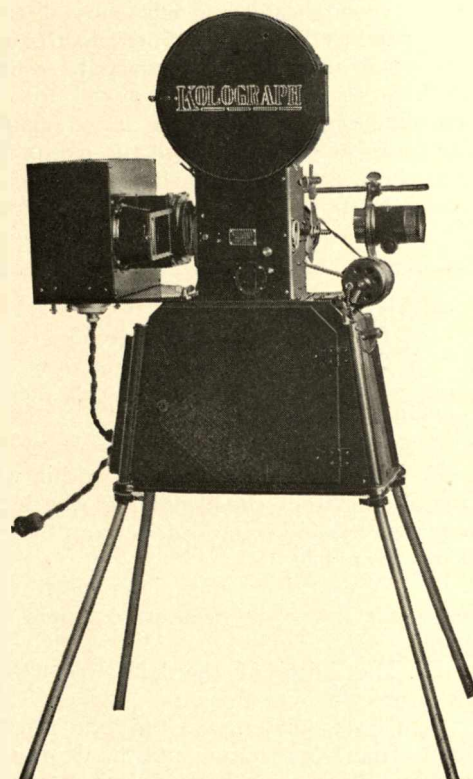
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single station the proper spacing of tanks from each other as well as from adjacent property lines is a matter of importance, in order to minimize the exposure hazard.

The regulations and specifications of the National Fire Protection Association (Boston, Mass.) set forth in detail excellent standards of design and construction, which are generally accepted by the larger operating companies in the industry, and which constitute safe and reasonable practice. The U. S. Bureau of Explosives (New York City) also publishes regulations regarding spacing of gasoline tankage from railroad property, which represent good practice and are generally accepted by the industry. While, in infrequent cases, particular municipalities have established individual regulations governing gasoline storage, in many instances causing considerable hardship and expense to operating companies having to comply with same, it is not believed, in order to secure safe storage, that it is in general necessary to radically depart from the specifications and acknowledged good practice requirements as embodied in the above mentioned publications.

Probably the greatest single cause of gasoline tank fires and explosions is lightning. It is therefore consoling, in view of this fact, to realize that a properly constructed, vapor-tight tank is almost immune to lightning. This has been proven many times in practice and exhaustive statistics have been compiled showing the very low fire-frequency-ratio for this type of tank, based on many hundreds of records over a considerable period of years. The second largest contributing cause of tank-fires is exposure, that is, proximity to another source of ignition. This can be reduced to a negligible consideration by the following of the spacing standards previously referred to. Special hazards and conditions attendant upon gasoline storage in particular cases require particular treatment. For example, when power or electrified railway lines; and there tanks are built adjacent to high tension is a possibility of stray electric currents being induced thru pipe lines, railway tracks, etc., it is important to provide proper grounding devices to interrupt the flow of such current and prevent its reaching tanks and oil pipe-lines.

In general, it is not necessary to install special devices for grounding tanks. Pipe-lines are usually buried and these are deemed sufficient for the purpose.

As regards static electricity, this is a possible element of danger under certain conditions, but there are many simple and ef-

fective methods of mitigating the effect of this in pipe-lines and at loading-racks.

As regards fire banks, it is, of course, of paramount importance that scientific investigation has developed conclusively that gasoline, even under the worst conditions of conflagration, cannot "boil over" and overflow the tank. Therefore, as long as the tank shell remains intact, the liquid gasoline, even tho burning, will not overflow its container. This means that in many cases fire banks are not of vital importance. In cases where topographical conditions are conducive to oil spreading over large areas, in case of shell rupture, it is highly desirable, however, to surround tanks with an adequate fire-wall or dyke, to prevent such spread of oil. This is particularly important where tankage is adjacent to flowing streams, adjacent flammable buildings or railroad right-of-way. Proper standards of design, and construction of fire walls are included in the specifications previously referred to.

As regards the use of water and chemical hand and portable fire extinguishing equipment to protect gasoline storage tanks at bulk stations, this is purely a matter that must be decided for each particular case. Large and important terminals in congested localities may require such protective devices, whereas the small, isolated location may not require such installations. Here, again, the past statistics and experiences would seem to be the deciding factor rather than theoretical considerations.

In passing, it might also be noted that proper maintenance is quite necessary in effecting proper storage. The avoidance of waste by looking after the little things and keeping construction up to standard helps much toward successful operation as well as maximum safety and minimum fire loss.

The discovery of a number of extremely prolific petroleum pools in recent years has resulted, despite a rapidly growing market, in tremendous amounts of petroleum and its products going into storage. It is impressive, it is believed, considering the large amounts of oil stored, and its generally flammable nature, that the fire loss has been extremely low. It is believed that this splendid record can be maintained and perhaps even bettered by the observance of the few fundamental considerations as set forth very briefly herein.

The petroleum industry and the various fire-protection organizations throughout the country are mutually striving toward this end, to conserve and handle safely and efficiently that important commodity—gasoline—so necessary to the industrial and social life of our nation today.

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- 4 Saves shrinkage of food and loss of flavor.
- 5 Ends the hours of kitchen drudgery.
- 6 Uses the heat that is now wasted.
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FIRE PROOF INSULATION

By E. W. HURD,

Chambers Mfg. Company, Shelbyville, Ind.

(Advertisement)

Probably most of us have been very well satisfied with our Gas Range, but the product of the Chambers Mfg. Company of Shelbyville, Indiana, U. S. A., shows only too clearly that our perceptions in this connection should be labelled as somewhat obtuse.

The work of the Company which is represented by a remarkably fine display of Fireless Gas Ranges, substitutes efficiency and economy for waste and extravagance and replaces with freedom the many hours of needless drudgery required by ordinary cooking methods.

The manner of accomplishment lies in the conservation of heat enabling the cooking to be done with the gas turned off.

This principle entirely supercedes the most up-to-date methods incidental to cooking in the ordinary way, which involves the continuous burning of gas, and sets a new standard of efficiency altogether.

The waste of effort, the waste of time, the waste of fuel, and the waste of food and flavor are the fundamental cooking problems which the Chambers Range has satisfactorily solved for the first time, by virtue principally of the patented Chambers Thermodome, designed for all cooking on top of the range, and the Chambers Insulated Oven for roasting or baking. These special units retain and use for cooking the heat that radiates from the ordinary range. The gas is burned for a few minutes only, and is then turned off. Without further attention and without further gas entire meals are completed deliciously, with the minimum loss through shrinkage and the maximum convenience and efficiency. The total amount of time required for cooking is just the same as with any other range.

The Thermodome is a heavily insulated dome-shaped hood operating over the open around the side of the cooking vessel. In a few minutes a single turn of the lever shuts off the gas and lowers the Thermodome burner, accumulating the heat that escapes when food cooks on for hours without attention on retained heat.

The Chambers insulated Oven enables roasting and baking to be affected without care and attention, and provides food cooked more deliciously than is possible in any

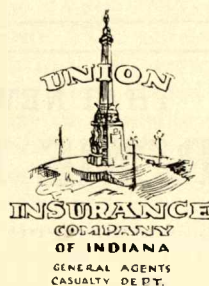
other way. In the rear of the Chambers oven is a vent so located that even heat circulation is secured. This insures evenly browned baking and thoroughly cooked meats. During the time the gas is burning this vent is left open. When the gas is turned off, the process of cooking on retained heat is automatically started. The walls of the Chambers Oven are so perfectly insulated that the bare hand can be placed upon the outside walls, even when the gas may have been burning for thirty minutes required to start a large roast.

When the gas is turned off, no cooking tasks need keep you longer in the kitchen. Your food with its rich natural juices and flavor retained, is ready for serving at dinner time. When the time ordinarily spent in the kitchen basting and watching in order to properly cook a roast or fowl is considered, the service rendered by the Chambers Insulated Oven can be fully appreciated.

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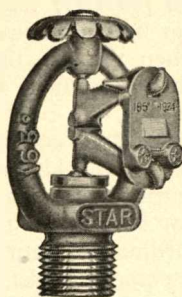
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CONSISTENTLY PROGRESSIVE

Year	Assets	Insurance in Force
1915	\$190,696.00	\$2,473,960.00
1910	\$676,788.00	\$7,550,731.00
1920	\$1,798,675.00	\$20,541,571.00
1925	\$4,407,517.18	\$40,500,940.00

Reasons why it pays to be friendly with "The Friendly Company"

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"At the Sign of the Orange Disc"

AUTOMATIC REGULATION OF THE HEATING PLANT REDUCES FIRE HAZARD

By DONALD JONES,

*Honeywell Heating Specialties Co.,
Wabash, Indiana.*

(Advertisement)

Danger of fire from careless attention to the heating plant may now be reduced to a minimum. Heating-plant controls are now available which provide positive protection against excessive heating-plant temperatures firing a dry boiler, and many other hazards.

The Honeywell Heating Specialties Company, located in Wabash, Indiana, has spent over twenty years in the development of regulators that not only automatically control room temperature, but also provide much-needed protection against faulty control of the heating plant.

The Honeywell System for the ordinary coal-fired heating plant consists of a Thermostat located in one of the upper rooms of the house, a motor in the basement which opens or closes the dampers as the room-thermostat calls for more or less heat, and a device which prevents over-heating the heating-plant. Besides providing a uniform room-temperature, and the consequent economical use of fuel, this System affords protection against opening the drafts and then forgetting them—the cause of most dangerous over-heating of heating plants.

The increasing popularity of oil as a fuel for domestic heating has resulted in the perfection of oil-burner controls by the Honeywell Company that make oil burning safe in the event of any emergency. In the Honeywell System of Oil-Burner Control, the room Thermostat actuates a switch in the basement which starts and stops the burner motor. If for any reason the burner should not ignite a few seconds after it is started, a Combustion Control located in the stack, shuts off the supply of oil and also the burner-motor. Should the boiler temperature or pressure become sufficiently high before the heat has had time to be dissipated through the house and thus cause the Thermostat to shut off the burner, a Masterstat shuts off the burner—thus providing a valuable dual control. This Masterstat is connected to the boiler by a thermostatic element which not only limits the boiler temperature or pressure, but also provides safety should the temperature become excessive. This provides a very desirable protection against firing a dry boiler. And it is so designed that it is positive protection against its own pos-

sible failure to function. Where the dry-boiler feature is not desired, the dual control is provided by a Vaporstat for steam, vacuum or vapor plants, an Aquastat for hot water plants, or an Airstat for warm-air plants.

The latest Honeywell development for oil burner control is an Electric Oil Valve, located in the feed-pipe. As readily may be appreciated, a most necessary protection in the use of oil is a proper control of the source of oil supply. Being motor operated, the Honeywell Electric Oil Valve has ample power to overcome sticking and clogging caused by dirt and grease. When the Thermostat calls for heat, and the motor-switch turns on the burner motor, the Electric Oil Valve is automatically opened. When either the Thermostat, Combustion Control, or Masterstat calls for less heat, the valve automatically closes. The Valve also automatically closes should current fail—a most necessary protection, else the oil might continue to flow while the burner, being electrically operated, would not be functioning. A basement flooded with oil might result, which would be a dangerous hazard. The Electric Oil Valve is also unaffected by voltage fluctuations—a very desirable feature, as in many localities voltage often fluctuates as great as 15% from normal.

The Honeywell System of Gas Control is the only complete system of gas control that has been devised. It consists of a room Thermostat, temperature or pressure Limiting Device, Electric Gas Valve and Automatic Pilot Safety. In operation it is similar to the Honeywell System of Oil Control. The Valve located in the feed-pipe, however, may be manually controlled as well as electrically. Thus, should the current fail, it is possible, by operating a lifter, to open the Valve and keep the fire going even though the current be off. When current service is resumed, control of the Valve returns automatically to the Thermostat. This provides a valuable protection against forgetfulness—and tampering with the valve lifter by an inexperienced person. The Honeywell Automatic Pilot Safety is so designed that should the pilot accidentally become extinguished, the gas supply immediately is shut off.



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REDUCING THE FIRE HAZARDS IN ELECTRIC MOTORS

By M. O. SOUTHWORTH,

Fairbanks-Morse Co., Indianapolis

That electric motors with anti-friction bearings such as ball-bearings, definitely reduce fire hazard in becoming widely recognized among fire prevention authorities. It has been found that ordinary bearings of the sleeve type require frequent and copious lubrication and the best of the class are not oil-tight. The excess oil leaks into the windings, breaks down the insulation and causes a short circuit of the field windings. Then also the most improved type of plain bearings will wear appreciably due to the rubbing action of the shaft. In induction motors where the air-gap is small this wear is a very serious matter because with this wear the air-gap is destroyed and the rotor drops down until it strikes the stator. The striking of the rotor against the stator breaks the insulation of the coils and causes "arcing" which in the presence of inflammable material has been the cause of many fires.

Steamy or gassy atmosphere, metal and carbon dust, heavy loads and high temperatures are all factors contributing to the short life of sleeve bearings. The burned out plain bearing in a situation such as this is a common occurrence and even though the property loss itself may be small the loss due to interrupted production is often great.

The anti-friction type of bearing has done much to eliminate bearing-troubles and to consequently reduce fire hazards. In order to understand why this is true, it is necessary to have a conception of how the modern ball-bearing is constructed. The bearings consist of an inner and outer ring or race between which are two rows of balls which roll on these hardened and polished surfaces. The inner race is mounted on the rotating shaft and the stationary outer race in a housing. Grease is used for lubrication and very little lubrication is required due to the fact that there is very little friction between the balls and the highly polished surfaces of the races.

It is plainly evident that since the problem of lubrication has practically been eliminated the ball-bearing motor has eliminated the one great source of trouble that is found with the sleeve-bearing motor. Even if a ball-bearing motor should run dry the rotor would not drop down on the stator as is the case where the babbit melts out of a sleeve-bearing.

Another important advantage of the ball-bearing motor is the fact that it is possible to seal the bearing so that all dirt and abrasive dusts are kept out of the bearing. This is one reason why the ball-bearing motor is so especially adaptable to services where there is considerable inflammable or abrasive dust carried in the air.

Many fires which are now attributed to spontaneous ignition, electrical defects, "unknown" causes and those fires which occur after the plant shuts down for the day, might in many cases be charged to overheated bearings. There is no question but that the dripping of oil from plain bearings is a distinct fire hazard.

This fire hazard, due to overheated bearings, was covered in the October 1926 issue of the Quarterly of the National Fire Protection Association in an article by Edward N. Harriman. In this article the following uses of anti-friction bearings were recommended as a fire prevention measure:

1. Motors in inaccessible locations.
2. Ventilation fans.
3. All bearings where the dust explosion hazard is present.
4. All bearings on machinery used in the presence of inflammable gases.
5. On woodworking machinery.
6. Bearings exposed to abrasive dusts or extreme heat.
7. On all machinery used in the manufacture of inflammable materials such as celluloid, rubber cement, cotton pickers, etc.

Supplementing the article by Mr. Harriman were reports of fifteen typical fires due to hot bearings. These were classified by the N. F. P. A. Department of Fire Records. In about a year and a half, sixty-three reports of this nature were recorded.

USE OF ENCLOSED VENTILATED MOTORS

Another development which has brought about a reduction in the fire hazard due to

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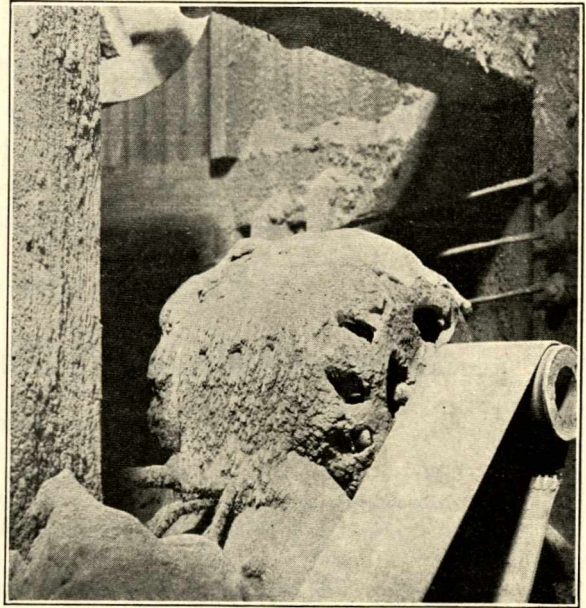
electric motors is the use of the enclosed ventilated type of motor.

1. It prevents injurious matter from entering the motor. This injurious matter might be moisture, acid fumes or caustic fumes, all of which may corrode metal parts within the machine and will gradually injure even the very best insulation. It might be oil which is not only harmful to insulation but which also causes dust to collect and cake within the motor. Excessive amounts of dust chips, lint, and similar material are sometimes very harmful because they clog ventilating passages and cause the motor to overheat and even burn out. Steel and iron filings or chips in the motor may cause considerable damage by being drawn into the air gap by magnetic attraction or by lodging in the windings where, agitated by vibration, they cut through the insulation, usually with serious consequences.

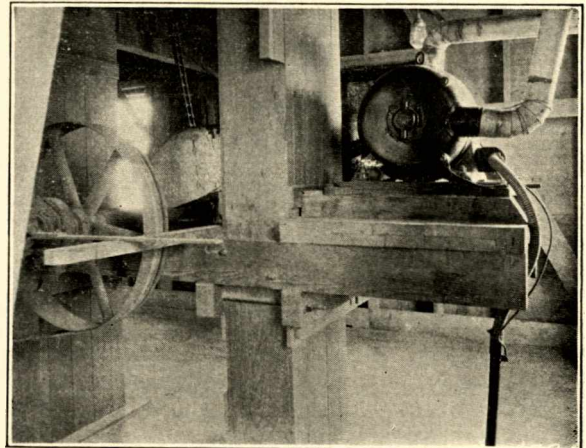
2. Enclosing the motor confines any motor trouble to the motor itself. Through causes which are entirely beyond the control of the motor manufacturer, any motor may be overloaded and burn out. This is especially true where the ventilation of the machine has been impaired either by deposits of dust or by injudiciously applied housings and covers. In an open motor, such a burn-out can easily start a fire or explosion if inflammable matter of any kind is present. The enclosed motor allows no sparks, flame or hot metal to escape.

In the enclosed ventilated motor there are two ventilating openings, one for letting in air and the other for letting it out. These are designed to be connected with sheet metal pipes to the open air. If the fire hazard is of no consequence, the exhaust opening can be left open, and the air leaving the motor will mingle with that in the room in which the motor is installed. On the other

hand, if there is no dust present, but it is necessary to guard against fire, it is possible to connect the exhaust opening only though it is always best from every standpoint to connect both openings to pipes.



Fairbanks-Morse ball bearing motors are frequently operated in places where the motors become covered with abrasive dust or inflammable materials. The motor shown in this illustration is operated while covered with slate dust in the plant of the Staso Milling Company, manufacturers of slate roofing materials at Poullney, Vermont.



In addition to the reduction of fire hazard by the use of ball bearing motors the totally enclosed and ventilated unit adds still another great factor of safety. This view shows a 15 hp. Fairbanks-Morse, type EH, ball bearing enclosed ventilated motor operating in the plant of the Russell Miller Milling Company at Grand Forks, North Dakota.

ROBERT FROST DAGGETT

Architect

Continental Bank Bldg.

Indianapolis

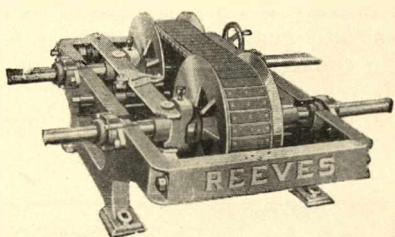
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Columbus, Ind.

REEVES

Variable Speed Transmission

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We cooperate with our policy holders on all possible means of fire prevention. When fire does come, the best service we can render is prompt and full payment of losses. The Mutual idea is to provide real insurance at actual cost. Further information on request.

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THE ROUND FLUE CHIMNEY

By RAY G. ANDERSON

A. IMPORTANCE OF CHIMNEY CONSTRUCTION

The problem of chimney construction has for years been considered a vital one. During each minute of the day, twenty-four hours a day, \$1,000,000 in property is being wiped out by fire. Each week a minimum of 1,600 dwellings, 150 apartments, 12 churches, 10 schools go up in smoke, are some of the toll of the fire demon. Carelessness in the construction of chimneys is responsible for the major part of this enormous loss.

One of the functions of the chimney of the home is to confine the fire, flame and smoke but cannot do so unless sound and properly built, or installed. In the nature of things, heat radiates from them. This makes a good safe clearance to unprotected woodwork very important and necessary. Again it becomes obvious that tightness in the construction is of utmost importance, particularly on the inner wall. If any openings are formed, heat naturally rushes through such openings. The causes of chimney fires are easily understood and the remedies are very simple. For that reason most all of these fires mean gross neglect, carelessness and indifference on the part of the owners or occupants of the home. A careful inspection on the part of the owner would eliminate a great amount of fire. It would mean greater safety for the entire home and family.

In the United States Government bulletin No. 1230, the following statements are made concerning chimney construction:

"Of the mistakes commonly made in home building, none is more frequent than faulty designs and construction of chimneys. No defect in the construction of the home detracts more from the comfort of the home and none is a greater menace to life and property than a poor chimney. A working knowledge of the principles to be observed in planning and building this important part of the home will go a long way to promote the comfort of the home and *insure the property*."

"The draft depends entirely upon the chimney flue. Deep pockets allow soot accumulation that may take fire. The National Board of Fire Underwriters report a larger number of fires are caused by defective chimneys than by anything else.

"Unsatisfactory heating plants in homes and excessive fuel consumption are due to improperly constructed chimneys, which are the rule rather than the exception. A leaky

flue is the most frequent cause of heating troubles, high fuel bills and destructive fires.

"Flue gases cause disintegration of mortar in straight joints. This disintegration and that caused from changes in temperature results frequently in open cracks in the flue, which reduce or check the draft."

The round flue offers the least resistance to the passage of gases, but the square flue offers the most resistance because of structural reasons.

The most efficient chimney is one built perfectly straight, with a round or nearly round flue, and a smooth interior surface.

There are several matters that must have attention in the installation of the chimney and heating plant. Can you answer the following questions satisfactorily? If you cannot, you are not giving your family, employees, or property the protection they deserve.

1. Is the chimney free from openings on the interior wall, loose brick or mortar?
2. Is there any woodwork in direct contact with the chimney wall?
3. Is the stove, boiler, or furnace sound?
4. Is there a smoke-pipe, running through an attic, closet, or other concealed place?
5. Is the smoke-pipe sound, well-joined and wired, properly fitted into a chimney thimble?
6. Are any flue holes papered over, closed up with wood, or stuffed with old rags?
7. Is the roof of the home or building a shingle roof, or moss grown so as to be readily ignited by chimney sparks?
8. Do you store ashes in wooden receptacles or cartons, or in contact with any combustible materials?

B. THE CAUSE OF CHIMNEY FIRES

A knowledge of the actual facts concerning the construction of past chimneys will immediately clear up the questions that might arise relative to the reasons for the tremendous fire loss traceable to chimney construction. In most parts this past construction has been built of common brick with a straight verticle joint, seven bricks to a course to an 8x12 construction plus flue lining.

Flue lining, we will admit, was a hope for improvement, but in reality when cracked, chipped, imperfectly sealed at the joint, warped or untrue, presents an added fire hazard. A careful and complete national

Continued on page 71



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FURNITURE

Shelbyville, Ind.

Continued from Page 69
survey shows four chief factors that enter into the construction of the flue lined chimney.

1. The delivery of the two foot flue lining to the job. At best, flue lining or fire clay, the only type having the approval of the National Board of Fire Underwriters, and in many sections unobtainable, is a brittle, cumbersome unit that does not thrive nor improve in value when subjected to rough roads or bumps and jarring that occurs when driving into the lot where the new home is being built. In addition to the trip, we have the chance of breakage in loading and unloading of lining.

2. We now have the problem of actual construction. All too frequently we find the mason building approximately three feet of outer wall, then lifting the heavy lining and dropping it into place and building around it. The former is the easier method, and in this day and age oft times we find the easier methods most popular.

3. Following the mason, we have the furnace installer. He must puncture the chimney wall in order to obtain an opening into the chimney wall, unless liner was omitted, in order to obtain an opening into the chimney for the smoke-pipe of the furnace. He could carefully chip his way through the lining and then cement the openings, but in this case again "punching" his way through the lining wall is quickest and easiest, and again the most popular. The result of the "punching" process is bound to show a cracked lining, and that at the one point where tightness of construction is most vital, and possibly a more damaging "punching" process is that of the addition of a cook stove smoke-pipe into the flue. In practically every case this addition is made by "punching" a hole through the tile lining and then inserting the smoke pipe. The tile lining "punched" out in order to make an opening, falls into the mouth of the flue, obstructing the passage of gases of the lower furnace smoke pipe connection. This is one of the fire traps that so often escape any general chimney inspection, a hidden menace to the home in every case.

4. On cold zero winter nights we find the house temperature dropping to approximately 50 degrees. In the morning, warmth is desired. Drafts and dampers are open, resulting in, we will assume, thirty minutes of heavy firing to obtain the desired house temperature. Tests have clearly shown at such times heat in the amount of 100 degrees is thrown directly into the chimney. The continuous applications of this type of firing will cause sudden expansion and con-

traction, cracking and breaking down the average flue lining.

The square corner of past construction again presents one of the causes of soot collection allowed in home building. The fact that smoke travels spirally in chimney walls (regardless of shape) is universally admitted. The square corner then presents nothing other than a dead air pocket where back drafts or eddy currents cause congealing of gases, resulting in the formation of soot. This soot clings to the corner walls in masses, ready to ignite through a spark from the furnace, into a roaring and destructive chimney fire. Sparks escape through cracked lining into the attic or roof level of the home. A preventable fire is the result.

C. THE ROUND FLUE CHIMNEY

All scientific progress in the world today is based upon an increased comprehension of the natural laws and the harmonizing of our efforts to conform with them, and the science of chimney construction is no exception.

1. The whirlwinds that gather up the loose leaves and dust, and cast them sky-high; the cyclone that sweeps everything before it in a whirling, upward spiral phenomenon never varies in the final proof that this affords the line of least resistance to ascending columns of heat, and it is a universal fact that nature takes the line of least resistance in all her efforts.

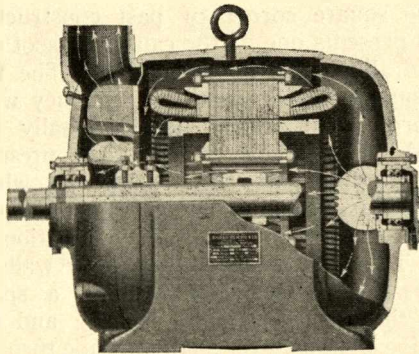
2. With the above patent facts before us, it will be seen that chimney construction should be made to conform to the natural law rather than to try to force the law to conform to the structure, and it is with this thought in mind that a new round flue safety chimney has been designed.

3. In this round flue safety chimney the vertical joints have been reduced to four. Each joint when interlocked in five and one-half inches of mortar makes the escape of gases an impossibility. The locked vertical joints precludes any possible seepage, giving a form of construction that is absolutely tight and leakproof.

4. Soot accumulation in the chimney, which is the greatest hazard in burning soft coal, is eliminated in the round flue chimney, because there are no corners in which the gases can congeal, and lodge as soot, the entire flue wall being constantly swept by a whirling, ascending column of gas. It goes without saying that this automatic cleaning of the heating plant, and the cleanliness of the home.

5. The round flue chimney conforming to the natural law is freed from descending air currents and back-drafts. Because of this

Continued to Page 73



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Like a fire wall built around the motor the shell of the F-M enclosed ventilated motor provides complete protection from explosive dust and fumes. Free rolling ball bearings eliminate the hot bearing hazard. It is grease lubricated. There are no pools of inflammable oil and it is thoroughly ventilated with clean, cool air from outside.

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Continued from page 71

fact, there is a fuel saving that cannot be passed unnoticed. This fact was clearly demonstrated in tests conducted by one of the largest furnace manufacturers in the country. Reasons for this large fuel saving are apparent, inasmuch as to obtain maximum heat delivery from fuel, a steady distribution of oxygen must continually pass over the firebed, so that perfect combustion can be obtained.

6. It is therefore evident that the moment the jumpy draft from eddy currents in square corners shuts off the steady distribution of oxygen over the firebed just that moment heat loss is sustained, and clinkers and improperly burned fuel are found in the grate of the furnace.

7. Some of the greatest assets that can be contributed to the American home by the chimney are: first, safety from fire hazard; second, efficiency of the heating plant; third, the economy of its fuel consumption. All of these features are practically entirely dependent upon the chimney. The round flue following the path of the whirling ascending gases, minimum vertical joints, the interlocking five and one-half joint, are some of the reasons for approval of the round flue construction, without liners.

In an exhaustive test conducted by the Purdue University at Lafayette, Indiana, one of the most progressive engineering schools in the country today, the following was among several of the conclusions arrived at:

"The average temperature of the flue gases in all four positions in the chimney was $8\frac{1}{2}\%$ less in the Round Flue Chimney than in the standard tile lined-one. From a fire hazard standpoint this places the Round Flue Chimney in a more favorable position especially so if constructed of a solid brick with vertical joints interlocked."

Later, under observation of the Bureau of Standards, a special firing test was made to determine the fire resistance of the material in Brick Lined Chimneys and the Round Flue Chimney. Similar furnaces connected to chimneys were fired heavily for several hours bringing the temperature as high as 1400 degrees, after which the chimneys were taken down and inspected. All liners in the brick-lined chimney were cracked or broken down, and the interlocking brick in the Round Flue showed no effects of the high temperature. Such material as lint and spider webs were not disturbed by the high temperature of the gases inside the chimney. The above test clearly justifies the statements previously made in this article, and the unlined Round

Flue Chimney is recommended. Round Liners will not take the place of the UNLINED Round Flue Interlocking Brick.

After a careful survey of the terrifying fire loss that this generation has been subjected to because of inadequate and improperly built residential chimneys, is it not fitting that the building program of the present day, that will provide the homes of the future generation, should take into consideration this vital feature? The least that we can do is to take care of the safety, efficiency and economy feature, any one or all of which are dependent upon the chimney of the home of the future generation, instead of a hazard make your chimney a Safe Investment.

THE UNION TRACTION COMPANY WORKS FOR FIRE PREVENTION

The Union Traction Company of Indiana, since its establishment, has preached "Safety First." This not only applies to the operation of its trains but also to fire. The question of fire prevention which has been a live subject with them and one on which considerable stress has been laid in an effort to prevent loss and damage.

This company has always aided in every movement for the prevention of fires and the disasters incident thereto.

At this time, the company desires to thank the various Fire Departments throughout its territory, and particularly Indianapolis, for the many instances of aid given to the company when needed. The company stands ready at all times to extend full co-operation to the various cities in any program, the object of which is the prevention of fire.

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FIRE AND PANIC IN SCHOOLS

By FRANK M. POTTER *Vice-President, Potter Mfg. Corp., Chicago.*

The tremendous loss of life in school fires of the past makes the problem of safeguarding the children from any possible recurrence of such tragedies in the future a duty of major importance for all fire preventionists, fire and school officials of the country. The co-operation of the public in enforcing the recommendations of these officials should be active and eager.

But what of these recommendations? Is there a plan which will eliminate this loss of life? Is it applicable to the great majority of existing school buildings? And to new buildings as well?

We are happy to answer in the affirmative. Yes. There is a practical plan, logical and simple. It is so simple that a fourteen year old child can appreciate the common sense of it.

The first step taken in arriving at the plan is to study conditions in school fires of the past where lives were lost. Particularly where the loss of life was greatest. This study reveals a surprising fact, which affects the ultimate plan materially.

Fire was not the direct cause of the loss of life. It was panic. Panic caused by the presence of smoke from the fire. The exits were not blocked by flames. Warning was given and the fire drills started in plenty of time for the children to have marched safely out of the building. Previous fire drills had taught the children to make their exit via the hallways, stairways and other regular exits. There was smoke in the hallways and when the children passed from the class rooms into the hallway they smelled the smoke and knew the building was afire. Thus panic started. Within a few seconds a mass of crushed and trampled human bodies was the result.

Does this not suggest something to you? That the hallway is the danger point at time of fire.

We would not view the situation with so much alarm if this occurred but once. But it has occurred again and again and again. And there are thousands of buildings in the country today where the same conditions exist. Exactly the same conditions. And all that is required for repetition after repetition of these horrible tragedies is a spark to start the fire. That is what we are alarmed about.

What about the plan? What is the prin-

ciple of it? It is simply this:

If the hallway is a danger point at time of fire, why take the children through it to get them out of the building? Why not provide emergency exits from the classroom directly to the outside? Allow no one to pass through or enter an open hallway to get to an emergency exit. You have then avoided taking them through the danger point. You have eliminated panic and loss of life. The children will be safely out of the building before they know it is afire.

At first you might assume that to comply with this plan would require an emergency exit from each room. However, this is not necessarily true. Usually two or more class rooms can be made intercommunicating by providing doors in the partitions between them and all such rooms use the same emergency exit. The floor plan of each building presents a separate problem and whatever alterations are necessary to comply with the principle of keeping the children out of the hallway to make their exit from the building should be required. If the floor level under consideration is at the grade level all that is required is the emergency exit. If, however, the floor level is above the grade level (second or third floor) some device must be provided to convey the children SAFELY from the emergency exit to the ground. These devices are commonly known as fire escapes. This is the first step. When these requirements have been complied with you have only started.

Now comes the second step, and perhaps the most important of all. It is this:

After the emergency exits and fire escapes have been installed, the children must practice making their exit from the building over the new route. This must be done regularly and systematically and so often that the drill becomes automatic or mechanical. This point cannot be stressed too strongly, for to provide everything required in the first step and then neglect to practice the second step is to defeat the entire plan.

You may now recall that the building which your children attend is equipped with fire escapes and assume that they are perfectly safe. But the chances are 99 to 100 that you are wrong. We have observed thousands of buildings so equipped and on investigation learn that the fire escapes are seldom, if ever, used for drills. The reason usually given by the authorities is that the fire escapes are not considered safe

enough to use for drills. They are usually the outside open stairway type. They may not be properly located or properly installed. They may be too steep. You may have to crawl through a window to get to them. They may not reach to the ground. The heels of the girls' shoes may catch in the treads. Some of the children may become dizzy during their descent. They may be covered with sleet, snow or ice during the winter months. For one reason or another they are not considered safe enough and are not used for drills.

This condition presents the third and very important step.

In your choice of a fire escape make certain the device is absolutely safe that no one will have the least hesitancy in using it at any time or under any condition. To help in your selection of such a device we are suggesting a few specifications which, if required of a fire escape, insures perfect safety in its use.

1. The sliding type of escape. Eliminates dizziness, slipping, stumbling, falling, etc.

2. Entrance doors must be flush with floor level and be equipped with anti-panic hardware. This relieves congestion at entrance and accomodates two or three times as many persons.

3. Fire escape must be entirely enclosed. Protects against sleet, ice, and snow in winter (when most fires occur) and also against falling objects or smoke and flames breaking through windows near escape.

4. There shall be no door at lower end. These doors are supposed to open automatically but sometimes fail. Result—a tube jammed full of children.

5. Inquire whether the fire escape has been tested and approved by the Underwriters' Laboratories, meets the specifications of the National Fire Protection Association or other nationally known and competent engineers.

These few simple requirements compose the plan. We believe without a shadow of a doubt that if this plan is put into operation there will never be a loss of life from panic or fire.

Let us enumerate them once more.

THE PLAN

1. Provide emergency exists from the class room to the outside.

2. Allow no one to pass through or enter an open hallway to reach an emergency exit.

3. Conduct fire drills regularly, down the fire escapes.

- 3 Provide fire escapes that are perfectly safe to use under any condition.

There has never been a panic or loss of a single life in a building where this plan is in effect.

You may sometime hear a school board member complain that it would cost too much money to provide the equipment.

We respectfully submit these statistics.

At Babb Switch, Oklahoma (a one story frame school building) the previous installation of an emergency exit (door equipped with panic bolt) cost approximately \$50.00, would undoubtedly have saved 36 lives.

At Collinwood, Ohio, the previous installation of equipment and alterations to comply with this plan approximate cost \$1500, would undoubtedly have saved 175 lives.

Rather good investments, don't you think?

Did you ever hear of a School Board refusing to comply with the recommendations or order of a State authority for safeguarding the lives of the children in their care? We have.

Only a few states have provided severe penalties in case lives are lost through the neglect or refusal of a school board to comply with the orders of the State Fire Marshal to provide certain equipment.

The penalty could not be too severe. If, due to the neglect or refusal of a school board member to provide nationally recognized safeguards your child's life should be taken by panic or fire would you not think that that man should pay the penalty, not only with his personal fortune, but also with his life. We think you would.

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Approved tile is an absolutely non-combustible material and has high dielectric properties; it undergoes the severest fire test in its process of manufacture by being heated for days in sealed kilns to temperatures ranging from 2,000 to 25,000 degrees Fahrenheit under conditions which do not occur in burning buildings. This high degree of fire resistance makes tile suitable as an effective protection for floors and walls of combustible or semi-combustible construction and, in case of fire, leaves non-burnable avenues of escape open to the point of collapse. Tile floors, walls and ceiling insure adequate protection and time for the escape of occupants. It is essentially a lightweight wall, floor and ceiling finish which effectively localizes fires and acts as a fire stop.

The fact that for every dollar of fire loss occasioned by exterior fires twenty-five dollars is paid for losses caused by fires originating in the interior of buildings indicates the acuteness of the need for such interior protection, especially in schools, hospitals, theatres, churches and other places of public assemblage. Aisles, passage-ways, corridors, lobbies, etc., leading into and out of such buildings must be held open for escape for a considerable length of time.

Vaults for the storage of moving picture film, operators' booths in moving picture theatres, work rooms in dry cleaning establishments, laboratories or similar rooms where inflammable or high combustible materials and substances are stored and handled may be effectively insulated against fire-spread by means of tile work.

In combustible and semi-fire proof forms of construction, all zones or surfaces subject to heat contact or radiation from heating and cooking appliances may be made fire-resistant and safe by tile work. This applies in particular to dwellings, but also to schools, hospitals, hotels, restaurants, laundries, bakeries, and the like.

The same varieties of tile may be used for fire prevention purposes which are elsewhere used in such buildings for sanitary or decorative purposes, and applied as a "veneer" over old and new, and any type of permanent construction.

The lack of protection around cooking stoves is one of the most frequent causes of fire in dwellings. For many years building codes and recommendations by the National Board of Fire Underwriters' Building code required kitchen ranges and stoves to be placed not less than 3 feet from woodwork or wooden lath and plaster partitions. New provisions have now been adopted by the

Committee on Building Construction of the National Fire Protection Association whereby the range, stove or other heating appliance may be placed close to the wall without danger from fire when all combustible forms of construction are protected by incombustible materials and one coat of plaster or mortar instead of three is sufficient, when the affected surfaces are covered with tile.

The use of tile in this connection provides a floor and wall protection which is slightly, sanitary and fire protective in the highest degree. The floor tiling should extend at least 18 inches in front and on open sides of the appliance plus 12 inches on either side or end, from the floor to the ceiling where stove pipes occur, and not less than five feet high elsewhere. Such protection around heating and cooking appliances can be installed in new and old buildings at very moderate cost. It presents no structural difficulties and would reduce in no little amount the loss of life and property which fires originating from this source claim every year. The entire floor and wainscots of rooms containing heating and cooking appliances can usually be tiled with very little additional cost, and fire safety increased correspondingly.

Lower Fire Hazards

with

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ARC WELDED TANKS

All Emerson-Scheuring Tanks are Electric Arc Welded, expertly made of the finest materials, and especially designed to comply with the strictest fire regulations.

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Auburn Automobile Company

AUBURN, INDIANA

\$40,000 Elevator Fire at Flora.
[Special to The Indianapolis News]
LOGANSPORT, Ind., August 16.—
The McCorkle grain elevator at
Flora, Ind., August 15, was
destroyed by a fire which
burned for several hours, causing
a loss of \$40,000.

**BABY DIES OF
GASOLINE BURN**
Ind., Aug. 15.—
A baby, the child of a
family living at
Suitsville, Ind., August 15,
died of a fire which
burned for several hours,
causing a loss of \$40,000.

**FIRE GUTS NOTRE
DAME BUILDINGS**
SOUTH BEND, Ind., August 11.—
[INS]—University of Notre Dame
authorities Thursday were conduct-
ing an investigation into the cause
of a fire which destroyed the
buildings at the cause-
able by a fire which
burned for several hours,
causing a loss of \$40,000.

**COURTHOUSE
OF DAVIES,
STORES BURN**
Loss Early Today at
ington, Ind., May Ex-
ceed \$400,000

10,000 FARM FIRE
Hay Believed
ANDERSON, I.
loss of more than
on the farm of M.

**2, TORTURED, DIE
OF BURNS, HURTS**
Man Saves Nephew From
Fire; Infant Son Perish

**Wayne B. Wheeler Fights
Flames, but Wife Dies**
Escanaba, Mich.
[Special to The Indianapolis News]
Dashing
house

**HEAVY DAMAGE IN
WASHINGTON FIRES**
Davies and Stores
County
Automobile of
Washington

GIRL DIES OF BURNS
Caroline Ignited by Explos
Special to The Indianapolis News
SOUTH BEND, Ind., August 15.
Bliss, age 14, died as the result of burns
suffered when her clothing of bur-

**ARSON HEARING TO
CONTINUE TUESDAY**
E. C. Armstrong to Face
Charge of Attempt to
fraud Insur-

POTTERY PLANT BURNS
Officials Plan to Rebuild Ohio Firm
Swept by \$400,000 Blaze
ZANESVILLE, O., July 30.—(INS)
men here today were still wet-
smoking embers of the
tery Co. plant
under wa-

CHURCH FIRES DESCR
Antientary Prisoner Burned
a Canadian Edifices.
August 15

GIRL DIES OF BURNS
Clothing Saturated With Turpentine
In Explosion.
[Special to The Indianapolis News]
HARTFORD CITY, Ind.,
girl, age nine, d

**26 CHILDREN
PERISH IN FIRE**
Matron At California School
Dies Rescuing Little
Burned By Bombs
The Indianapolis News
H., Ind., August 6
ev. 800 five dan-

**BURN IN
\$8,000 FIRE LOSS AS
BURNS, GRAIN BURNS**
ASH, August 18.—(Special)
estimated at \$8,000 resulted
the fire which totally destroyed
the barn and wagon shed

**ELEVATOR BURNS
LOSS OF \$25,000**
COLUMBUS, Ind., Aug. 13.—Loss
of \$25,000 was suffered in the burn-
ing of a grain elevator at Nortor-
ville east of here
owned b-

**BLAZE DESTROYS
Petersburg Home**
FIRE DOES \$200 DAMAGE

**FIRE UNDER WATER
STARTS BLAZE**
at D. Whitaker's r
to Matche

HEATER

**ARSON SQUAD
STARTED HERE**
ENTLY ORPHANED BY FIRE
WITNESS DESTRUCTION

**3 CHILDREN DIE
FIRE; GIRL SAVES**
EG, Canada, Aug.
apes and three
in age from 15
death when
clothing was ignited. She
shoes with
and when she
tove. Fur
d Sunday

Garage, 2 Cars Burn
PLYMOUTH, Ind., Aug. 30.—A
burned at Culver, near here, and to
three year-old boys, said to be
age 15 and 16, were in the garage
when the fire started.

**ARSON HEARING TO
CONTINUE TUESDAY**
E. C. Armstrong to Face
Charge of Attempt to
fraud Insur-

POTTERY PLANT BURNS
Officials Plan to Rebuild Ohio Firm
Swept by \$400,000 Blaze
ZANESVILLE, O., July 30.—(INS)
men here today were still wet-
smoking embers of the
tery Co. plant
under wa-

CHURCH FIRES DESCR
Antientary Prisoner Burned
a Canadian Edifices.
August 15

GIRL DIES OF BURNS
Clothing Saturated With Turpentine
In Explosion.
[Special to The Indianapolis News]
HARTFORD CITY, Ind.,
girl, age nine, d

**26 CHILDREN
PERISH IN FIRE**
Matron At California School
Dies Rescuing Little
Burned By Bombs
The Indianapolis News
H., Ind., August 6
ev. 800 five dan-

**BURN IN
\$8,000 FIRE LOSS AS
BURNS, GRAIN BURNS**
ASH, August 18.—(Special)
estimated at \$8,000 resulted
the fire which totally destroyed
the barn and wagon shed

**ELEVATOR BURNS
LOSS OF \$25,000**
COLUMBUS, Ind., Aug. 13.—Loss
of \$25,000 was suffered in the burn-
ing of a grain elevator at Nortor-
ville east of here
owned b-

**BLAZE DESTROYS
Petersburg Home**
FIRE DOES \$200 DAMAGE

**FIRE UNDER WATER
STARTS BLAZE**
at D. Whitaker's r
to Matche

HEATER

**ARSON SQUAD
STARTED HERE**
ENTLY ORPHANED BY FIRE
WITNESS DESTRUCTION

**3 CHILDREN DIE
FIRE; GIRL SAVES**
EG, Canada, Aug.
apes and three
in age from 15
death when
clothing was ignited. She
shoes with
and when she
tove. Fur
d Sunday

Another Honeywell Protection---



Figure the number of fires in your city caused by over-heated heating plants, particularly from firing dry boilers. Then you will appreciate the protection provided in the new Honeywell MASTERSTAT—which is already used as standard equipment by a substantial proportion of oil burner manufacturers.

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CONGESTED AREAS

Conflagrations are not as common as they once were, but they still present a serious problem. Their decrease in numbers is due to the fact that fire-resistant construction is being used more and more, especially in congested districts.

Whenever fires occur, they may be traced to the existence of burnable buildings.

The National Fire Protection Association, in speaking of conflagrations says:

"A study of the fire loss statistics of the leading large cities of the United States for 1926 brings out prominently the serious fires and high losses in congested areas. It is almost unbelievable, but these reports show that an average of 1% of the number of fires is responsible for 66% of the amount of loss. This being true, every effort should be made to bring about better protection for highly valued district of every city through better construction, satisfactory protection of openings in and between buildings through which fire can spread, installation of sprinkler systems, improvement of fire apparatus and efficiency, and every other means which can be applied to these areas. A better knowledge of the above statistics ought to secure the proper co-operation from business men for the bettering of conditions, both in construction and equipment."

Flimsy Roofs Are Dangerous

More than 20 per cent of all residence fires start on the roof, according to insurance underwriter's statistic. In several instances conflagrations have spread through stray sparks alighting on combustible roofing material. Given a reasonably strong wind and a small fire, a big scale conflagration will follow if there are enough burnable roofs to accommodate the flying sparks.

A combustible roof is a liability to the community. Numerous cities have passed ordinances requiring the use of non-burnable roofing materials. One of these laws was recently brought before the Supreme Court of New Jersey, which held that such enactments are constitutional.

Fireproof residence roofs consist either of composition shingles or of tile. Both are made in regular, uniform sizes, so that they can be put in place at a minimum cost.

These fireproof roofs have an additional practical value in their permanence. It is estimated that the United States spends \$160,000,000 annually for replacing old roofs. Were permanent materials used originally, this sum would be reduced to a fraction, for climatic fluctuations, rain, snow, heat, and time have little destructive effect on non-combustible roofing materials.

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USE MORE FIREPROOF MATERIALS IN SCHOOLS

Five schools burn every day, according to the National Fire Protection Association. The fire hazard in this type of building has increased in the past as the result of the extensive use of laboratory and domestic science supplies.

In order to eliminate these fires, fire-resistant construction is essential. This can be secured in small and inexpensive school-houses as well as in large and pretentious structures.

Masonry or concrete construction is the primary essential for fire-resistance. The use of locally made masonry units permits this type of building at a comparatively low cost.

In the smaller communities, "wall bearing" construction is most economical for buildings one or two stories high. In this type of building; the floor construction is carried directly by the walls, as it is in a house.

One or two story construction is advocated wherever there is sufficient ground space available. In congested areas it is often necessary to build higher school houses. With this type of building, the skeleton form of

construction is generally used. Here the floor construction is supported by columns which are concealed in the walls.

Fireproof walls should be supplemented by floors and roofs of similar construction. With this type of construction, structural damage will be built out and the chances of a fire entering the building from the outside will be practically eliminated.

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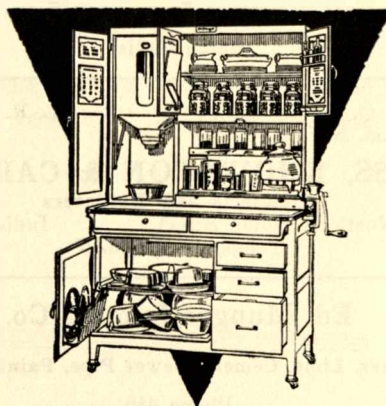
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NOTICE

Announcing Changes in Indiana Fire Prevention Journal

Because it is believed that it will be more effective as well as more economical, to issue the **Indiana Fire Prevention Journal** once each three months (quarterly) instead of monthly as has been done for the past year, plans accordingly have been made. This announcement is made to inform our readers that from now on the Journal will be issued quarterly and will be known as the **Indiana Fire Prevention Quarterly**.

The change is being made at the commencement of the fiscal year which begins October 1st. The first issue will be for the months of October, November and December and will be published early in January.

We make this announcement in order that those who have been getting the monthly publication will know why they do not receive it for the next three months.—Editor.

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WHAT PRICE IGNORANCE

By E. F. JACQUA, *Education Assistant,
State Fire Marshal Department*

Mr. and Mrs. Citizen! You harbor your worst enemies! The twin giants, Ignorance and Carelessness, rule you because you do not rule them! Ruthless friends of almost unbelievable power are they. And their preferred plaything is Fire!

In 1925, you paid five hundred and forty-nine millions of dollars in tribute to fire.

You, Mr. and Mrs. Citizen! You paid \$439,000,000 of this vast sum because of ignorance and carelessness.

Too long you have accepted fire losses as unpreventable! Too long you have accepted dim excuses for this extravagance.

Your home, your business, your loved ones, may be sacrificed tomorrow.

Waste is criminal. Not all crimes are committed by those who "do"; many are committed by those who "don't."

Are you guilty?

Break the chains of lethargy! Realization will give you freedom. Wake from your dreaming! Drive the fog of indifference from your mind. The problem is yours!

Knowledge of certain danger makes you wise.

Thoroughly sell yourself the idea of fire prevention.

Sell the idea to your clubs, church, councilmen and mayor. Implant the fear of fire deep in their minds and purses.

Educate the citizens of tomorrow in the elements of fire prevention.

Mr. and Mrs. Citizen! Are you the ruler or slave? You alone can decide.

THE BEST PAYS

(Advertisement)

The Bock Laundry Machine Company of Toledo, Ohio, in making its announcement of the perfection of a new vapor-proof motor writes us as follows:

"The Bock Vapor-Proof Motor and switch are entirely enclosed and insulated from the air in the room.

"The Bock Extractor is not a superior old type extrator, but is entirely new in principle and design. Everyone has sometime or other spun a top. At first it will wobble and appear to be off balance but gradually the centrifugal force developed by its rapid revolution will cause the top to find its center of balance, and then it spins without the slightest variation from its radius; that is the principle of the gyroscope, of dynamic (automatic) balance and of the Bock Extractor—no matter if the load is unevenly

placed in the basket the terrific speed of 1725 R. P. M. forces it to find its center of balance.

"For this reason, every ounce of weight in the load and basket is turning with the motor instead of against it, making possible the terrific speed developed by a motor of much smaller horsepower than is used in other types of Extractors.

"This speed which multiplies its centrifugal force of unbelievable power insures a uniform extraction because the part of the load at the center of the basket is whirled as dry as the part of the load at the rim of the basket."

"The use of Bock Vapor-Proof Extractors will greatly reduce the danger of fires in dry-cleaning plants. The machine is insulated from the floor so that there is no possibility of frictional sparks,—and every safeguard has been taken to make it perfectly safe under all conditions. Tests extending over a period of twelve months and the performance records of the hundreds of Bock Vapor-Proof Extractors now in actual service have proven that the Extractor is 100% Vapor Proof."

UNDERWRITERS TEST COLUMNS AS FIRE HAZARDS

In order that a building material be fire-resistant, it must not only withstand the flames without catching fire; it must also retain its strength under heat. Some materials weaken and melt when they reach certain temperatures, and as a consequence cannot withstand the loads they are required to bear.

Because of this action of different materials, it is important that columns be of a type of construction which will not lose its strength under heat. A study of a variety of columns was made by the Laboratory of the National Board of Fire Underwriters at Chicago. A load was placed on each column, which was subjected to fire for an extended period. Only two type of columns withstood the combined action of the heat and the weight for a period of eight hours, namely: re-inforced concrete columns of limestone or calcareous gravel concrete with two inches of covering over the steel, and steel columns embedded in and protected by at least four inches of this type of concrete.

The re-inforced concrete columns which survived the eight hour test were either 16 inches square or 17 inches in diameter. The steel ones were 16 inches square or 14¼ by 19⅛ inches, depending upon the shape of the fabricated section.

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THE BASIC PROOF IN ARSON CASES

By MILTON W. WAREING

*Chief Investigator, State Fire Marshal
Department*

The first fact an investigator should establish when working on a suspicious fire and be able to prove by competent witnesses if he hopes to make an arson case, is the corpus delicti, the body of the offense, the essence of the crime. It is a general rule not to convict unless the corpus delicti can be established. That is, until the fact that the crime has been actually perpetrated has first been proven.

The corpus delicti in arson consists of the proof of the burning, and of criminal agency in causing it. *Spears vs. the State* 92 Miss. 613, 16 L. R. A. (N. S.) 285.

It is the rule of law, that all fires are presumed to have been of accidental origin. This presumption must be overcome and proven before an arson case can be established.

The corpus delicti in many cases is discovered by persons who were the first to arrive at the scene of the fire. Therefore, the fire chief and the firemen should pay particular attention to discover where the fire originated. They should detect if there is any odor of coal oil, gasoline, or other inflammable substance present while they are fighting the flames. It is their duty to extinguish the fire. They should, if possible, also ascertain the origin and if there is any evidence of incendiarism in or around the building. If they find any such evidence it should be tagged and the tags marked so that the finder can identify it at any later date. They should preserve it by placing such sets under lock and key, or turn them over to Deputies of the State Fire Marshal's office, so that some person or persons will be able to testify in court that this oil can, or that streamer or this candle is the same set that he, or they took from the debris of the building. He or they should be able to testify positively as to the identification of these exhibits of the State, i. e., he or they should testify this is the same coal oil can or the same candle, the same streamer that he found in the burning building and not that he thinks it is the same, or that it looks like the same article. Positive statements made on the witness stand are the statements that influence the jury when it comes time to render its verdict.

Sometime ago this department investigated a fire which occurred in a fruit store. There was an explosion which blew fruit thru the front window into the street. There

was a can discovered in the building after the fire, which smelled as tho it had contained coal oil. This can had finger prints burned in, on the side of the can. This can was found a few feet from the side door, which door was found open when the firemen arrived. One of the firemen picked up a partially burned tallow candle just outside this open door in the alley. The proprietor was found later in the evening at his home with his face burned and his hair singed. The burned-in finger marks on the can were identified by the finger print expert as the finger prints of the proprietor.

The day of the trial the firemen who found the tallow candle in the alley had misplaced it and the candle could not be produced and used as evidence.

Many times fires are set with newspapers and it often happens that portions of these papers are not destroyed and are found by fire chiefs and our investigators when they make inspection of the building; in many cases these parts of paper become the clue to the discovery of the guilty agency in setting the fire.

An investigator arriving upon the scene to make an investigation where there had been an attempt to set fire to a building discovered that a large bundle of newspapers with other articles had been placed next to the weather boarding of the building. The newspapers had been set on fire. A small portion of one of these newspapers was not burned and the same was examined very closely and the name of the person to whom the paper was addressed by the publisher was found on the paper, which led to the apprehension of the culprit.

The finding of matches at the place where the fire was kindled in the building has helped materially in uncovering the guilty person who set the fire. Foot prints found around the premises where the building was burned should be accurately measured so that the person measuring them can testify intelligently on the witness stand in regard to same. Likewise automobile tracks should be measured so that the person measuring them may become a competent witness for the State. Finger prints found on doors, windows, and other places in the building should be carefully preserved until an expert can be called to examine and take photographs thereof.

Continued on page 91

QUEER WAYS FIRES SOMETIMES START

By MILTON W. WAREING,

Chief Investigator, State Fire Marshal Dept.

An Indianapolis optician had on display in his show window a magnifying glass. He had placed back of this glass a newspaper so that the passersby might notice its great power. The Sun's rays passing through the lens concentrated at one point on the paper produced enough heat to ignite the newspaper. The burning newspaper set fire to the decorations in the window. The contents of the show window were destroyed before the fire was extinguished.

In the month of July, 1925 a barn located on a farm a few miles north of Greenfield was discovered to be on fire. The family had just finished their morning meal. There was no apparent clue as to the origin. However, at the time of this fire the owner of the barn was having trouble with two boys of the neighborhood over the payment of a promissory note. In the course of an investigation it also developed that these boys had been suspected of various misdemeanors committed in that neighborhood. The owner was of the opinion these boys set this barn on fire and related a circumstance that confirmed his suspicions. He stated that some few days previous to the fire one of the boys was over to his place and they talked over the payment of this note. The conversation took place in the barnyard. The owner noticed the boy had a piece of magnifying glass, or mirror, he did not know which, concealed in his hand. He also noticed that the boy would throw the reflection of the sun's rays first here and then there at different places over the barn lot. The owner was convinced that this boy later had come to his barn and placed a lens or mirror in the hay mow in such a position that when the sun's rays passed through the glass, or were reflected from a mirror and were focused upon the hay. The sun's rays set the barn on fire, he thought.

Last year at Nora, Indiana, a small town located a short distance out of Indianapolis, a merchant had on display in his show window different varieties of fireworks. The sun's rays passing through the glass of the show window generated so much heat that it caused an explosion of the fireworks. The fire thus started caused a loss to the owner of \$5000 over and above the amount of insurance he carried on his building and stock of goods.

A girl working in a factory was combing ostrich plumes with a celluloid comb. The atmosphere was damp. In combing the plumes she generated frictional electricity which ignited the feathery plumes. They

in turn set the girl's dress on fire. She was severely burned before the fire could be extinguished.

Two boys were standing on the college campus. One of the boys threw away a lighted cigarette butt. A sparrow flew to the ground, picked up the lighted cigarette butt and flew to the eaves of a nearby building where the bird was building a nest. The lighted cigarette set the bird nest on fire. The fire was communicated to the building. And, if the boys had not seen the occurrence, the building would have been damaged.

A man living in California is reported to have had a trick canary. One day he decided for the general good of his quarters he would give the bird a bath in gasoline. He did so and placed the bird on a pinnacle to dry. Thoughtlessly, he lit a cigar and lay down on a couch to rest after his labors. Without warning the canary flew and lighted on the projected cigar, a stunt the bird had often performed for the amusement of his friends. The cigar ignited the canary's gasoline-soaked plumage and the bird flew like a flaming arrow to the kitchen where the landlord was busily engaged in filling the reservoir of his gasoline stove. The flaming bird set fire to the fumes from the gasoline can, which caused an explosion wrecking the kitchen. Now the landlord is suing his roomer for damage done to the building.

A check-up enabled our investigator to establish a motive for an incendiary fire. It was developed during the investigation that the owner's family was absent from home. The owner when interrogated under oath stated that he returned from the field at or about 3 o'clock in the afternoon. He said that he went into the house and lay down on the couch to take a short rest. After lying there a few minutes he saw an electric spark running up and down the electric cord hanging from the ceiling to the electric light bulb of the reading light. Very shortly afterward he saw electric sparks shooting from all the electric wiring in the room. He jumped up, ran out of the house and discovered both the house and barn on fire. He stated the electric current used to light his home and barn was furnished by the interurban line which passed in front of his home. Several months later the owner of this property came to this office. He was very sociable. But before he left he related to us that after the fire he had made an examination of the electric light fuse box and had discovered that someone had placed in

this box a fuse with a copper connection instead of a lead connection. This fuse, he explained, had the appearance of a regulative fuse. He made no accusation against anyone. Neither did he pass an opinion as to whom he suspected of doing this thing. The manner in which he related this circumstance, taken together with his attitude and general demeanor, produced in us a dubious state of mind as to whether or not he may have been the guilty agency in placing this "foney" fuse in the box. This incident left no doubt in our minds as to the origin of the fire.

There has been reported to this office for investigation several elevator fires from time to time. Quite a number of these fires seem to have originated in the tower of these elevators. A check up on the business of the elevator companies; the reputation of the officers; the value of the property burned; the amount of insurance carried on these buildings; the manner in which the fire burned; an the point at which the fire originated, leads us to suspect that someone interested in these elevators, financially, have learned how to manipulate the insulation of the electric wiring in these buildings so that they may have an incendiary fire with all the appearances of an electrical fire.

A painter wiping the turpentine off his hands with a rag placed the rag in his pocket and ascended a ladder. The rag caught fire from spontaneous combustion and he was severely burned before he could reach the ground.

A guest in a hotel one rainy night returned to his room and hung his garments over an electric light bulb to dry. He lay down on the bed for a nap. In a short time his room was discovered to be on fire. The heat from the electric light bulb on account of being confined by the garment, burst the bulb and in a short time his garments were on fire. The result would have been very disastrous if help had not come.

Some time people learn that their furnaces are in such condition that soot will accumulate and then explode. They arrange things for a profitable fire by taking out additional insurance on their property. In the case of merchants they reduced their stock of goods, or removed part of same from the building before the fire occurred. They prepare the furnace so that it will start a fire. Then a report on the fire blames the furnaces overloaded with soot.

A young man stated to us when interrogated in the State Fire Marshal's office relative to a fire which occurred at his home, that he had set fire to the building because he was greatly in need of money. The night

of the fire he retired with his wife about 10 o'clock p. m. After being in bed some time he got up, went upstairs to the attic where he knew the insulation was off the electric wiring, and placed an old mattress over the wiring at this point and returned to bed. Early the following morning the house was discovered to be on fire.

A young man who is engaged in the pressing business in the city of Indianapolis related to me that one Sunday afternoon he was driving in the locality of his business. Wishing to use the telephone he went to his shop. When he opened the door he found the room full of smoke. He rushed into the building to ascertain the cause. He discovered that someone had connected the plug to his pressing iron and that the iron had become hot and set fire to the cover on the pressing board and that this cover was almost burned up. In a very short time the building would have been on fire. It seems that the janitor when cleaning the shop on Sunday morning, saw the plug hanging by the cord from the socket and thinking it had been left hanging by mistake, placed the plug in the iron.

There are many queer ways fires may start. Some are of accidental origin. Many are by the design of some person, but the energetic, shrewd, intelligent, thoughtful, logical and experienced investigator of suspicious fires, knows how these fires originate and cannot be deceived, although they may be camouflaged to look like an accidental or natural fire.

THE BASIC PROOF IN ARSON CASES

Continued from page 89

All these things help to prove the corpus delicti and without these things which I have mentioned we cannot make an arson case.

The courts have held a confession alone ought not to be considered sufficient proof of the corpus delicti. *Springfellow vs. State*, 26 Miss. 157-59 Am. Dec. 247.

But the corpus delicti may be proven by circumstantial evidence. *Dennuck vs. U. S.* 135 Fed. 257, 6 Am. Cas. 993.

Therefore, we understand by these citations that even in a plea of guilty in court there must be some evidence to prove that the fire was set before the court would accept a plea of guilty in an arson case.

The object of this article is to again call the attention of the firechiefs and the firemen to the great importance and the necessity of looking for evidence of incendiarism when they are called upon to extinguish a fire and if such evidence is discovered they should preserve same, for without the proof of the corpus delicti the State cannot make an arson case.

The Danger of Static Electricity in Connection With Volatile Liquids

Static electricity may be defined as an isolated charge of electricity produced by friction. When a glass rod is held and rubbed with a piece of flannel it has the property of attracting pieces of silk, wool, gold leaf, etc. The glass and flannel is said to be electrified, or charged with static electricity. There are many other materials which have the property of producing static electricity through friction, such as ivory, rock crystal, wood, metals, resin, sealing wax, sulphur, cotton, the human hand, etc. If the materials charged are insulated from the ground, this charge is held or increased if more friction is produced and is not relieved until the object is grounded. A person walking along a new carpet with a heavy nap will collect static electricity with which to light a gas jet. In the presence of volatile liquids the hazards due to static electricity should be recognized and properly guarded.

Many fires of seemingly mysterious origin when fully investigated have been shown to have been caused by static charges and a short description of some of these fires will illustrate the need of precaution. It is reported from New York that a woman set fire to her hair by walking across a carpet after using a shampoo preparation which contained alcohol. Other cases of this kind are on record.

A doctor walked from the house to his garage wearing a fur coat and a pair of rubber boots. The friction caused by the coat rubbing on the boots and the fact that the man was insulated from the ground, caused a static charge to ignite the gasoline in his automobile, burning him severely. Silk and other articles washed in gasoline when about dry is rubbed may generate an electric spark of sufficient intensity to ignite the silk. Gasoline pumped through hose, unless same is grounded, will produce frictional electricity. All approved hose for inflammable liquids contains wires in the lining of the hose, electrically connecting the pump with the nozzle. When drawing volatile liquids into a metal can the handle should be of metal, the can being grounded to the discharge nozzle. It has been shown that straining gasoline through a chamois skin will produce a static charge. An 80 mesh wire screen should be used instead of a chamois strainer.

The automobile driven tank wagon was a cause of several mysterious fires until it was discovered that due to the rubber tires a static charge was possible, being produced by the belt on the fan. This has been overcome by attaching a chain to the rear axle of the truck, dragging the other end on the ground at all times, which relieves the static accumulation.

Dry cleaners should be especially careful in conducting their business, being sure that all metallic bodies are permanently grounded. The average dry cleaner, however, recognizes the hazards connected with his occupation and there are adequate laws governing this subject. Every year many accidents occur due to dry cleaning in the home. If it becomes absolutely necessary to clean a pair of gloves, or a silk dress, at home, by all means do this cleaning out doors, away from other buildings. Many women have been frightfully burned by rubbing silk gloves together after they had been saturated with gasoline and while on the hands. It is always best for the layman to have as little as possible to do with inflammable liquids. A pint of gasoline mixed with the proper proportion of air has an explosive violence equal to 80 pounds of dynamite.

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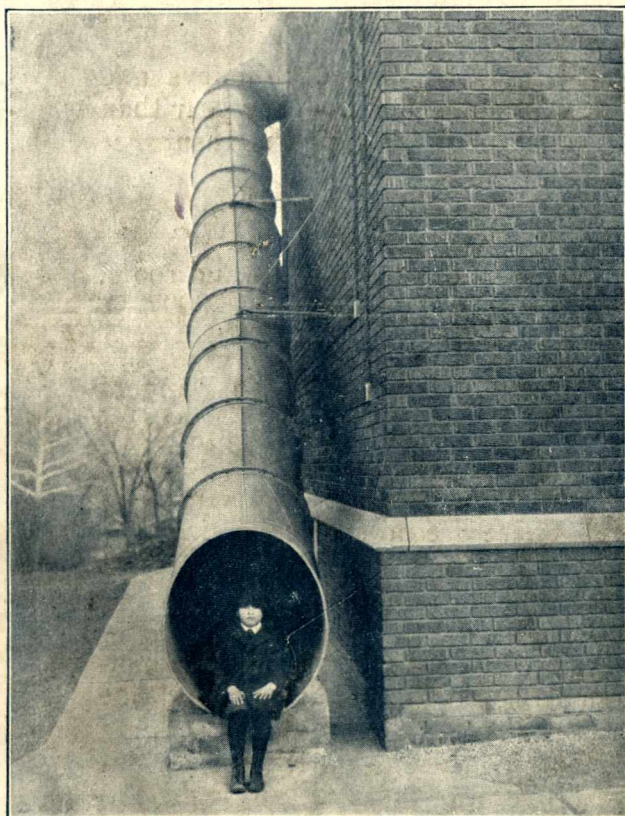
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